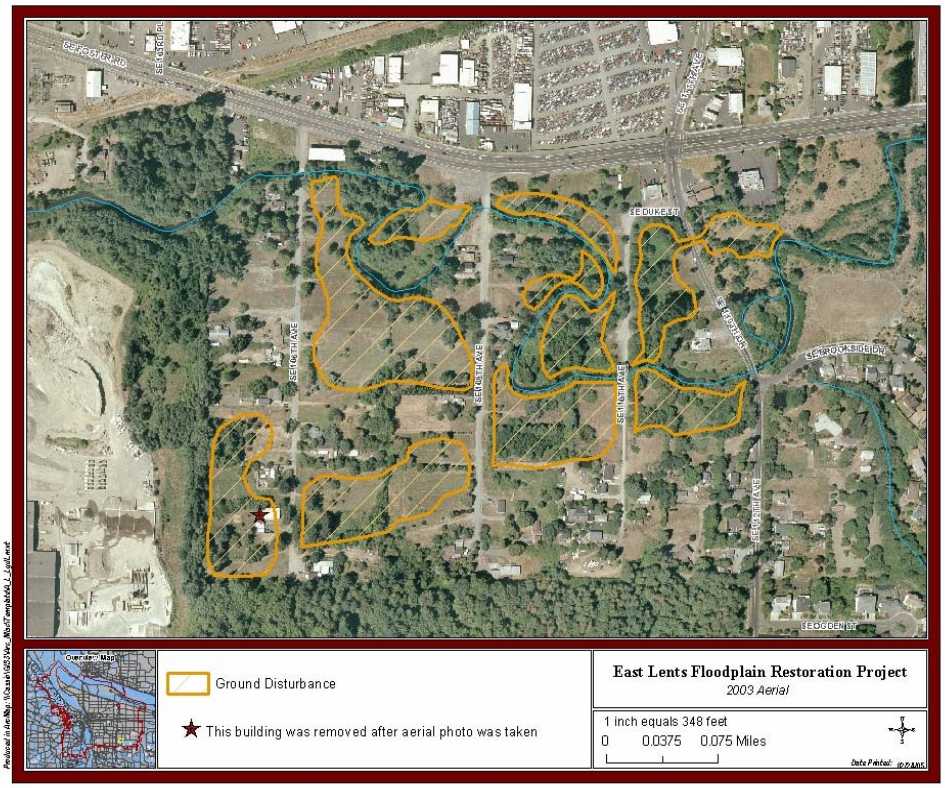
# DRAFT ENVIRONMENTAL ASSESSMENT

# East Lents Floodplain Restoration Project

CITY OF PORTLAND BUREAU OF ENVIRONMENTAL SERVICES

PORTLAND, OREGON

JUNE 2006




FEMA PROJECT NO. PDMC-OR-009

*URS Project No. 15702306*

FEMA

U.S. Department of Homeland Security

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## Appendices

## 1.0 INTRODUCTION

The National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), and the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) regulations for NEPA compliance (44 CFR Part 10) direct FEMA to consider environmental consequences of proposed projects receiving federal funding. This environmental assessment (EA) will assist FEMA in: a) disclosing whether funding the proposed East Lents Floodplain Restoration Project would result in impacts on the physical, natural, and social environment; and b) making a determination as to whether any "significant" adverse impacts would result from the Proposed Action. This environmental assessment will disclose the direct, indirect, and cumulative impacts from implementation of the project. Section 1.0 of the EA will describe the Proposed Action and Purpose and Need. Section 2.0 will examine the alternative process and selection of the Proposed Action. Section 3.0 will establish the existing conditions in the project area and disclose the impacts of the action on those conditions. Section 4.0 discloses the cumulative impacts of the project when viewed with other past, present, and future foreseeable actions. Sections 5.0 through 9.0 are general.

## 1.1 BACKGROUND AND LOCATION

NEPA and the CEQ regulations implementing NEPA direct FEMA and other federal agencies to fully understand and take into consideration environmental consequences of proposed federally funded projects. Under NEPA, Congress authorizes and directs federal agencies to carry out their regulations, policies, and programs as fully as possible in accordance with the statute's policies on environmental protection. NEPA requires federal agencies to make a series of evaluations and decisions that anticipate adverse effects on environmental resources. This requirement must be fulfilled whenever a federal agency proposes an action, grants a permit, or agrees to fund or otherwise authorize any other entity to undertake an action that could possibly affect the human or natural environment. In compliance with NEPA and its implementing regulations, FEMA has prepared this draft EA to analyze potential environmental impacts of alternatives.

The City of Portland's (City) Bureau of Environmental Services (BES) has developed a flood mitigation plan for the Lents area of southeast Portland in accordance with the State of Oregon Natural Hazard Mitigation Planning effort. Oregon's statewide planning goals require local governments to address natural hazards in their comprehensive plan and land use regulations. Goal 7 directs local governments to protect life and property from natural disaster hazards. The City of Portland's Planning Bureau is the implementing entity for Portland's Natural Hazard Mitigation Plan. The purpose of this plan is to create a disaster resistant city and meet the goals of the State Natural Hazard Mitigation Plan.

This phase of the mitigation plan would increase floodplain storage and conveyance capacity by removing alluvial and man-made floodplain fill and terracing the banks along Johnson Creek. This excavation would be paired with revegetation of the banks and floodplain, which would improve the natural resource functions of the floodplain and enhance riparian habitat, thereby benefiting fisheries and other aquatic resources. The project would be implemented on approximately 35 acres of property owned by the City south of SE Foster Road from SE 106$^{th}$ Avenue to SE 110$^{th}$ Drive (see Appendix A: Figures).

## 1.2 PURPOSE AND NEED

The City of Portland's BES, Multnomah County, Oregon, applied to the U.S. Department of Homeland Security's FEMA for funding assistance through the Pre-Disaster Mitigation Grant Program. The purpose of the Pre-Disaster Mitigation Program is to provide funding for projects that reduces overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations.

Based on past history, the Lents area faces a high risk each winter that Johnson Creek will overflow its banks and flood nearby community roads and properties. The need for the project is to reduce flooding in the East Lents neighborhood, while restoring the natural floodplain functions of Johnson Creek. This need is expressed in the long and well-documented history of repetitive flood events, with 37 out-of-bank floods since 1941, including 28 with property damage. Approximately 1,600 properties are within the 100-year floodplain. Frequent flooding closes roads in the area, including SE Foster Road, the main transportation artery with an average use of 25,000 vehicles per day.

## 1.3 PROJECT DESCRIPTION/PROPOSED ACTION

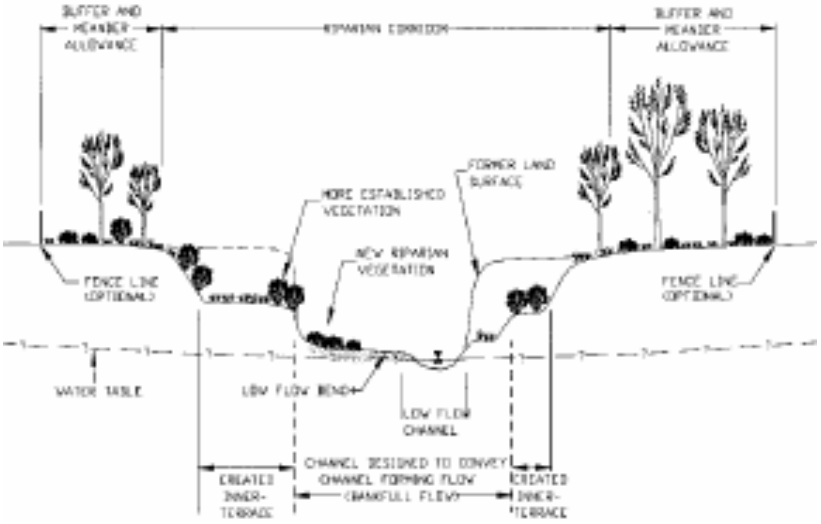
The existing Johnson Creek channel in the Lents area has been substantially modified through channel construction projects and hydrologic pattern changes. The channel has been altered to limit its natural geomorphic evolution and is currently in a highly controlled and manipulated state. The channel has been deepened and entrenched, resulting in very steep banks that were armored with riprap rockwork. The channel was also straightened in the downstream portion of the project area. The Proposed Action for flood management consists of two general elements: modification to the existing channel and modifications to the adjacent floodplain (Drawings 1 and 2). These elements would be used together or separately depending on the specific location within the project area to meet the overall project objectives.

***Modifications to the existing main channel.***

A two-stage channel is proposed (Drawing 1) (City of Portland, 2002a). The existing steep banks would be excavated to create two benches at different elevations adjacent to the main channel and at elevations below the existing valley floor. This would require re-shaping of the cross-section of the main channel of Johnson Creek throughout the project area.

Components of the two-stage channel are the low flow

**Drawing 1**

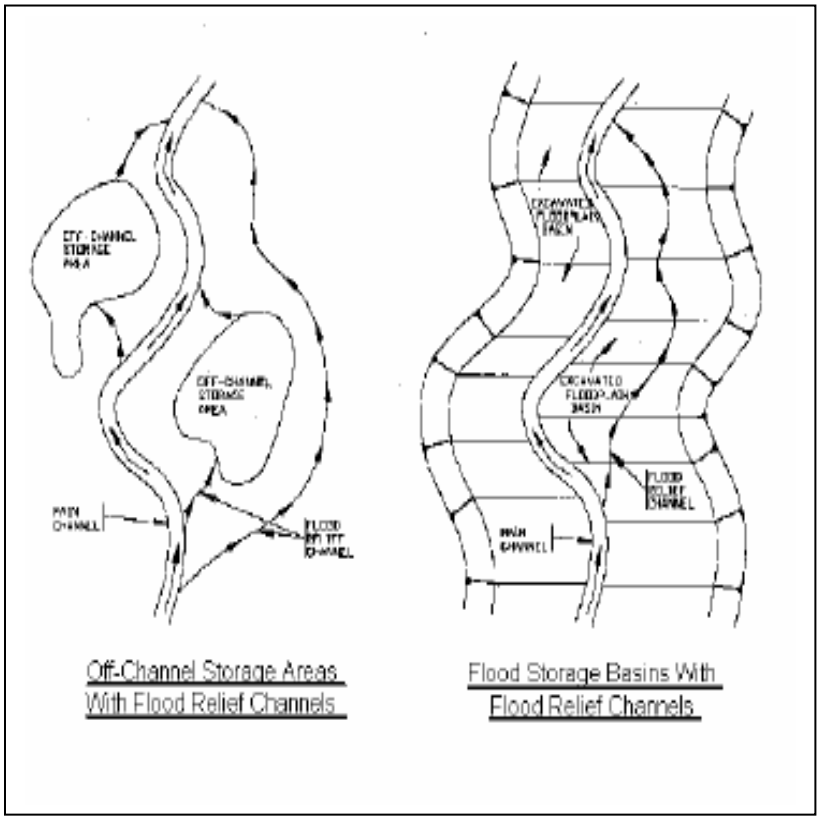



CONCEPTUAL CROSS SECTION OF A DESIGNED TWO-STAGE CHANNEL

channel, low flow bench, inner terrace, and riparian buffer and meander belt. The existing low flow channel and bed elevation would be minimally modified. The two-stage channel where applicable, would be physically constructed directly over the existing Johnson Creek main channel alignment. Modifications to the channel alignment outside of the existing channel would be based on hydrologic modeling and stream flow dynamics. Channel banks would be stabilized by riparian vegetation, allowing the channel to evolve and refine the original construction grading over time within a meander belt.

***Modifications to the adjacent floodplain.***

**Drawing 2**




Modification to the adjacent floodplain would consist of creation of flood relief channels, off-channel storage areas, and flood storage basins (Drawing 2).

Floodplain relief channels would be designed to connect to the main channel at optimal upstream and downstream locations. Off-channel storage areas would be physically separated from the main channel by un-excavated portions of the valley floor. In contrast with the off-channel storage areas, flood storage basins are contiguous with the main channel in a non-entrenched channel condition. As the water rises, the terraced channel will fill first, then the flood relief channels and off-channel storage areas, and finally the flood storage basin.

Technical feasibility of each flood relief component is site-specific and based on physical, ecological, or cost factors. The designs are not intended to restore channel and floodplain morphology that existed prior to human disturbance. These disturbances to the physical channel, floodplain, and hydrologic patterns have been extensive enough that complete restoration is not technically or financially practical. The Proposed Action would modify the existing channel and floodplain of Johnson Creek into a new system that is modeled after stable geomorphic form and process. Figure 1 in Appendix A shows a layout of those areas that have been identified through preliminary engineering and ecological analysis for flood relief channels, off-channel storage, and flood storage basins.

Components of the Proposed Action are:

- Removal of approximately 95,000 cubic yards of existing floodplain fill. The contractor will be responsible for an environmentally appropriate location for the fill that meets the City's criteria. This includes an upland location out of the 100 year floodplain.
- Excavation of approximately 18 acres of area identified through the alternative analysis process and hydrologic and hydraulic modeling.
- Excavation of existing perched wetlands.
- Short-term removal of riparian vegetation.

Construction phasing would consist of five main elements over three years. These include:

**1.** Fill removal and regrading of the floodplain to create bypass channels and placement of wood and rock

**2.** Dewatering of main channel

**3.** Contouring of the main channel to reconnect to the floodplain and channels

**4.** Placement of wood and rock in the main channel

**5.** Revegetation

## 2.0 ALTERNATIVES

This section will describe the flood management alternatives that were analyzed and contains details on the Proposed Action. In addition, this section will examine other alternatives and issues that were analyzed in two technical memorandums written to evaluate nuisance flood management design alternatives for the Lents area of Johnson Creek. The City published Lents Technical Memo 1 (TM1) in July 2001 and Lents Technical Memo II (TM2) in August 2002 to analyze the best 'footprint' for managing the nuisance flood in the Lents area. TM1 provided background and described the technical and policy issues that were considered in refining flood management alternatives. TM2 described the details of the flood management alternatives. These details include channel and floodplain concept designs, SE Foster Road crossing issues, Springwater Corridor right of way issues, and the flow of waters to areas north of SE Foster Road.

These studies indicate that it is possible to manage the nuisance flood in Lents within an area approximately 120 acres in size south of SE Foster Road between SE 92nd and SE 112th. The East Lents Floodplain Restoration Project is the first phase of this flood management project.

## 2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, FEMA would not provide funding to perform floodplain restoration in the East Lents Floodplain Restoration Project Area. Existing frequent flooding in the East Lents Project Area would continue as it has historically. BES may implement other projects in the area to lessen the effects of flooding but not to the degree that this funding would allow. People and nearby structures would continue to be at risk from five-year and ten-year flood events. Current and ongoing activities to protect these areas will continue, but not to the degree needed and/or anticipated if funding is provided. This alternative would not meet the project, City, or State goals and objectives.

## 2.2 ACTION ALTERNATIVE (PROPOSED ACTION)

The Project Area for the Proposed Action is 26.7 acres of property owned by the City and 8.3 acres privately owned. The privately owned parcels would not be affected by this proposal and only those properties that were bought through the willing seller program would be affected by this project. Approximately 18 acres of ground would be excavated from the site (see Appendix A). An estimated 95,000 cubic yards of fill would be removed to expand the floodplain along Johnson Creek and modify the adjacent floodplain. The Proposed Action would manage nuisance floodwaters south of SE Foster Road between SE 112th and Interstate 205. Construction would include creating a wider, two-stage channel within Johnson Creek. The design would also include off-channel storage areas within the adjacent floodplain and flood relief channels to route waters to storage locations or create alternative downstream flow paths. The Proposed Action is detailed in Section 1.3.

## 2.3 OTHER ALTERNATIVES CONSIDERED

BES has been working with the Lents community and other City bureaus since November 2000 to develop flood management in coordination with the Portland Development Commission Lents Urban Renewal Project. The objective is to store waters generated by up to ten-year flood events (nuisance floods) in ways that would improve the environment while also expanding options for community redevelopment.

Management alternatives that were considered incorporated a mix of components grouped in three general categories. These categories included:

1. **Existing Main Channel Modifications**: This involved physically reshaping the Johnson Creek banks by creating a tiered, two-stage channel to increase water storage capacity while improving in-stream habitat south of SE Foster Road.
2. **Modification to the Adjacent Floodplain:** When floodwaters leave the creek channel, these modifications would route and store water in adjacent, excavated channels and basins south of SE Foster Road to reduce flooding in other areas north of SE Foster Road.
3. **Structural Diversions:** This approach would use engineered structures, such as diversion channels funneled through culverts, to move water to flood storage areas north of SE Foster Road.

BES used these flood management components to create four potential approaches for storing nuisance floodwaters. Two options focused on moving water beneath SE Foster Road to storage areas north of the road. The other two options kept water south of SE Foster Road between SE 112th Avenue and Interstate 205. A technical team comprised of representatives from BES, Bureau of Parks and Recreation, Bureau of Planning, Office of Transportation, and the Endangered Species Act Program evaluated each alternative against a set of design considerations. These consideration were:

- Ability to store nuisance flood volumes
- Construction feasibility
- Long term stability of the channel and floodplain modifications
- Long term operations and maintenance
- Use of public lands
- Downstream impacts
- Environmental impacts and ease of permitting

Only one of the four alternative options was found feasible when analyzed against the design considerations. The recommended alternative became the Proposed Action.

The Proposed Action would manage nuisance floodwaters south of SE Foster Road between SE 112th and Interstate 205. Construction would include creating a wider, two-stage channel within Johnson Creek. The design would also include off-channel storage areas within the adjacent floodplain and flood relief channels to route waters to storage locations or create alternative downstream flow paths.

Alternatives that were considered but not analyzed in detail included:

*South of SE Foster Road with SE 106th and SE 108th Avenues remaining in place.* Computer modeling of flood storage capacity showed that leaving the streets would prevent full capture of a nuisance flood, and likely allow water onto SE Foster Road.

*Routing Floodwater North Under SE Foster Road Option 1.* This option would use channels and culverts to route water under SE Foster to storage areas between the road and Springwater Corridor and into Beggars Tick Marsh. Computer modeling shows this option might be

marginally feasible if private properties and SE Foster Road were allowed to flood. However, the engineering challenges, risk of trapping protected fish, and uncertainty about effectiveness led to rejection of this option.

*Routing Floodwater North Under SE Foster Road Option 2.* This option is the same as Option 1 except that flooding would be routed around private businesses immediately south of the Springwater Corridor. Modeling analysis showed that the nuisance flood couldn't be guided to areas north of the Springwater Corridor without causing flooding on properties to the south of the corridor. This is primarily due to flat topography and shallow groundwater.

# 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The following sections discuss the existing conditions by resource and the potential effects of the Proposed Action on the resources. For each topic or resource category, the impact analysis follows the same general approach. First, the existing conditions are established for the affected areas. Then, the regulations and policies that guide the impact assessment are identified, and finally, the specific impact thresholds for the intensity of impacts are developed (Table 3.0.1). Establishing thresholds and degrees of impact intensity were based on quantifiable impacts, a review of relevant scientific literature, previously prepared environmental documents, and the best professional judgment of the EA team resource specialists.

**Table 3.0-1 Impact Intensity Threshold Criteria**

| | |
|---|---|
| **Negligible** | Changes in the resource or resource related values would be below or at the level of detection. If detected, effects would be considered slight with no perceptible consequences to health or visibility. |
| **Minor** | Changes in resource or resource related values would be measurable; although the changes would be small, effects on the resource or the environment would be localized. |
| **Moderate** | Changes in the resource or resource related values would be readily apparent. The effects would be sufficient to cause concern, although effects would be relatively local and short-term. |
| **Major** | Changes in resource or resource related values would be obvious, the effects would have substantial consequences to the resource and environment and be noticed regionally. |
| Impact Duration Definitions: | |
| **Short-term effect** | Recovers in less than three years and contributes to a beneficial effect. |
| **Long-term effect** | Takes more than three years to recover and does not contribute to the long-term beneficial effect. |
| **Long-term beneficial effect** | Takes more than three years to recover and contributes to the long-term beneficial effect. |

Impacts are described in general terms and are qualified as short-term and long-term, adverse or beneficial, as appropriate. Impacts may also be described as direct or indirect. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by an action and occur later in time or are farther removed from the area, but are reasonably foreseeable. Cumulative impacts are also discussed, per NEPA requirements.

## 3.1 CLIMATE, GEOLOGY, AND SOILS

### 3.1.1 Climate

The climate of western Oregon and the City of Portland metropolitan area specifically is greatly influenced by winds from the Pacific Ocean. This geographic province has a moist climate with mild summers and cool, wet winters. The average winter temperatures for the area range from 39° to 43° F and the average summer temperatures range from 63° to 68° F (NOAA, 2006). The average total annual precipitation for the Portland area is 37 inches, most of it occurring as rainfall between the months of October and May. While rainfall occurs in any month of the year, the region generally endures a summer drought season, generally in the months of June through September.

### 3.1.2 Geology and Soils

Johnson Creek originates in Boring, Oregon, and travels 26 miles west through Clackamas and Multnomah counties, and the cities of Gresham and Portland before reaching its confluence with the Willamette River in Milwaukie. Johnson Creek is a tributary of the Willamette River. The floodplain of Johnson Creek is thought to be a remnant of large glacial floods that occurred about 15,000 years ago. The 'Missoula floods' helped shape the Columbia River basin and the large, flat floodplain in the Lents area of the Johnson Creek watershed.

According to the Soil Survey for the Multnomah County Area, the following soil types are mapped within the Lents area: Cascade Silt Loam (7D, 15 - 30% slopes), the Cascade-Urban Land Complex (8B, 0 - 8% slopes), and the Wapato Silt Loam (55, 3 - 8% slopes) (NRCS, 2006). Wapato Silt Loam, which occupies the majority of the project area, is considered a hydric soil (NRCS, 2006). Table 3.1-1 below documents the principal characteristics of the mapped soil types.

**Table 3.1-1 Soils Mapped by NRCS within the East Lents Floodplain Restoration Project Area**

| Soil Series (Mapping Unit) | Taxonomy | Drainage Class | Hydric* | Soil/Water Characteristics |
|---|---|---|---|---|
| Cascade Silt Loam, 15-30% slopes (7D) | Fine-silty, mixed, mesic *Typic Fragiumbrepts* | Somewhat poorly drained | No | The Cascade soil is a silty, somewhat poorly drained soil that occurs on mountains. This soil can be over 60 inches deep to bedrock. Permeability is slow. Water erosion is a potential hazard. A perched water table generally occurs 18 to 30 inches below the ground surface during winter and spring. |
| Cascade-Urban Land Complex, 0-8% slopes (8B) | Fine-silty, mixed, mesic *Typic Fragiumbrepts* | Somewhat poorly drained | No | The Cascade soil is over 60 inches deep to bedrock. It is silty, somewhat poorly drained and occurs on mountains. Permeability is slow. Water erosion is a potential hazard. The Urban land component of the complex consists of areas that are covered by streets, parking lots, buildings, and other structures. A perched water table generally occurs 18 to 30 inches below the ground surface during winter and spring. |
| Wapato Silt Loam, 3-8% slopes (55) | Fine-silty, mixed, mesic *Fluvaquentic Haplaquolls* | Poorly drained | Yes | The Wapato soil is a silty, poorly drained soil that occurs on floodplains and can be over 60 inches deep to bedrock. This soil is subject to flooding. This soil is considered hydric by the NRCS. An apparent water table generally occurs 0 to 12 inches below the ground surface from late fall through spring. |

*As described by the Natural Resource Conservation Service (NRCS December 2005).

## Environmental Consequences:

**Alternative 1 – No Action**

The No Action Alternative would have no effect on climate, geology, or soils in the project area beyond the current nuisance flooding that occurs. These floods do have impacts on soils within the project area by moving sediment outside the riparian areas. These impacts are generally beneficial based on the dynamics of the streams.

**Alternative 2 – Proposed Action**

With the Proposed Action, excavation within the wetlands could directly affect the soils by mixing hydric and non-hydric soils, thus altering the soil profiles, and by compacting soils during construction. However, these impacts would be mitigated by implementation of best management practices (BMP) and an erosion control and sediment reduction plan (BES, 2006). The impacts to soils would be considered moderate with soil disturbance throughout the approximate 18 acres. These impacts would be considered short-term and construction related with a long-term beneficial effect to soils over the long-term through establishment of greater floodplain and riparian vegetation increasing infiltration potential. No impacts are expected to climate or geology.

## 3.2 VEGETATION

The Johnson Creek watershed contains a mosaic of vegetation types, including agricultural lands, urban and suburban landscapes, upland forests, riparian corridors, and wetlands. Because of extensive logging and clearing, remnants of predevelopment vegetation are rare. About 57 percent of the watershed is currently vegetated. The forest that historically covered the Johnson Creek watershed was substantially cleared in the early 1900s for agriculture, timber production, and urban development. In the mid and late 20th century some areas such as the buttes and ridges in the south central and eastern part of the basin were left to regenerate into a second growth forest. Forest clearing of second growth has increased dramatically in recent years as housing development expanded from the lowlands onto the ridges and hillside slopes.

Channelization and development have greatly reduced riparian vegetation throughout most of the Johnson Creek watershed. In most of the watershed, riparian vegetation is narrow, minimal, or lacking. Thirty-four percent of the watershed has little or no riparian vegetation present, and an additional 32 percent has riparian vegetation less than 100 feet wide. The riparian corridors are also highly fragmented by frequent road crossings. Generally, vegetation in riparian areas is dominated by blackberry or young native plants and lacks large mature trees. However, riparian area vegetation quality is improving. Local agencies and citizen groups have ramped up efforts to remove invasive and non-native plants and replant natives, creating more canopy closure.

At the East Lents site, vegetation is a mosaic of wetland and upland urban plant communities with two forested riparian corridors along the current Johnson Creek and the historic Johnson Creek stream channels. The upland vegetation is a mix of grasslands and remnant cultivated species that reflects the existing private residences and the relic residential lots that were cleared by the City. The predominant grassland species in these upland areas are meadow foxtail (*Alopecurus pratensis*), several bluegrass species (*Poa* spp.), and common velvetgrass (*Holcus lanatus*). Cultivated tree species include weeping willow (*Salix babylonica*), rhododendron species (*Rhododendron* spp.), and horsechestnut (*Aesculus hippocastanum*).

Wetland vegetation in the project area varies by wetland type but in general consists of common velvetgrass, foxtail species (*Alopecurus* spp.), slough sedge (*Carex obnupta*), rush species (*Juncus* spp.), reed canarygrass (*Phalaris arundinacea*), Oregon ash (*Fraxinus latifolia*), Douglas' spiraea (*Spiraea douglasii*), and red-osier dogwood (*Cornus stolonifera*).

The riparian forest immediately adjacent to the historic Johnson Creek stream channel is moderately to densely wooded. The corridor is characterized by western red cedar (*Thuja plicata)*, Douglas fir (*Pseudotsuga menziesii)*, big leaf maple (*Acer macrophyllum*), red alder

(*Alnus rubra*), black cottonwood (*Populus balsamifera*), and Oregon ash in the tree stratum. The shrub and herbaceous component has several native species, but are more heavily dominated by non-native species including Himalayan blackberry (*Rubus discolor*), and English ivy (*Hedera helix*). There is also a narrow (approximately 10 to 20 feet wide) forested riparian corridor associated with Johnson Creek. This riparian corridor has fewer mature trees than the historic stream corridor and is characterized by more shrubs and non-native species. The native component consists primarily of black cottonwood and Oregon ash trees and saplings.

### 3.2.1 Threatened and Endangered Plant Species Biological Evaluation

A preliminary data review indicated six special status species as potentially occurring within the project area. Table 3.2-1, below, identifies all ESA listed plant species potentially occurring in the project vicinity and their status. The proposed project site was surveyed and evaluated for potential existing vegetation and habitat conditions that would support any of these species. Although potential habitat exists in the project area based on the transition from residential to open space no species were found during the surveys. The project, if implemented, would re-establish native plants and vegetation along the riparian areas and upland areas of the project which would increase the ecological value of these potential habitats.

**Table 3.2-1 ESA Listed Plant Species Potentially Occurring in the Proposed Project Area**

| **Common Name**<br>*Scientific Name* | **Federal Status[1]** | **State Status[1]** | **Determination[2]** |
|---|---|---|---|
| **Golden Indian paintbrush**<br>*Castilleja levisecta* | LT | LE | NE |
| **Willamette Valley daisy**<br>*Erigeron decumbens var. decumbens* | LE | LE | NE |
| **Howellia**<br>*Howellia aquatilis* | LE | -- | NE |
| **Bradshaw's lomatium**<br>*Lomatium bradshawii* | LE | LE | NE |
| **Kincaid's lupine**<br>*Lupinus sulphureus* ssp. *kincaidii* | LT | LT | NE |
| **Nelson's checker mallow**<br>*Sidalcea nelsoniana* | LT | LT | NE |

[1]Status Legend:
Federal ESA: LT = Listed Threatened, SOC = Species of Concern
[2]Determination Legend:
NE= No Effect

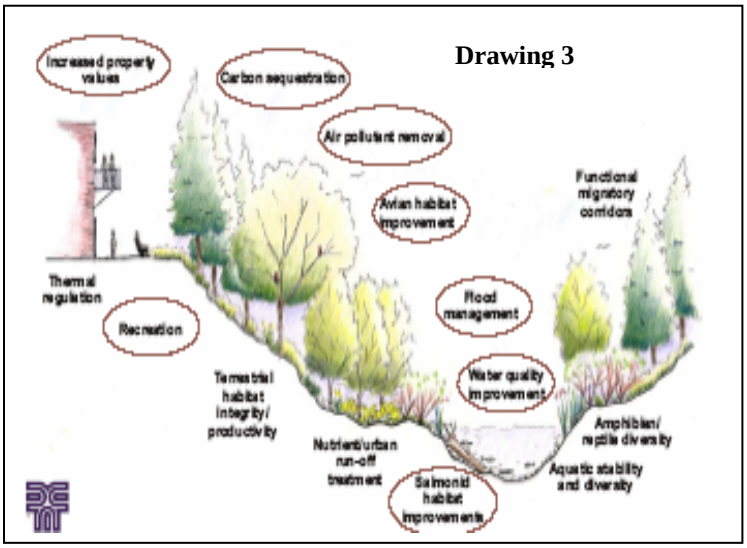
## Environmental Consequences:

**Alternative 1 – No Action**

The No Action Alternative would continue the regular maintenance (grass mowing and noxious weed abatement) of the area to reduce fire danger and the planting of native species to increase canopy closure. These actions include the reduction of nuisance plant species through mowing and other landscaping methods that are used to protect the area from potential fire and efforts to increase the percentage of native plant species through plantings.

**Alternative 2 – Proposed Action**

With the Proposed Action, 18.3 acres of vegetation in the project area would be directly affected due to clearing necessary to access and construct the project. Types of vegetation include riparian, wetland, and upland as described in the section above. Impacts to vegetation would be low in the short-term from construction related impacts but long-term beneficial after mitigation and restoration of the floodplain have been completed. No effect to threatened and endangered species is expected from implementation of the project.




## Mitigation:

Impacts to vegetation would be temporary. As part of the project design this area would be replanted after construction with site appropriate native herbs, grasses, shrubs, and trees (Drawing 3). Replanting with native species would provide a net benefit in areas that are currently dominated by non-native species.

## 3.3 WATER RESOURCES

At one time, the Johnson Creek watershed was dominantly forested, and supported salmon for nearly all of its length (Meross, 2000). Prior to European settlement, Johnson Creek was quite sinuous throughout much of its length, although it became less sinuous as it reached the escarpment above the Willamette River (Figure 2, Historic Map). Wetlands were present south of the creek between what are now SE 106th and SE 108th Avenues.

The Johnson Creek watershed was settled relatively early, the Johnson homestead which was the first was located at the eastern edge of the project area and the intersection of wagon roads to Portland and Oregon City were located near the western edge of the property. Now, 150 years later, the Johnson Creek watershed is characterized by mixed land uses, with exurban and agricultural uses predominating in the upper watershed, and urban uses in the lower watershed (from the eastern city limits of Gresham downstream to the Willamette River). As of 1995, land use in the watershed is approximately: 54 percent forest, agricultural, open space or parks; 35 percent low-density residential, and 11 percent high-density residential, commercial, industrial, and transportation (WCC, 1995). The watershed is expected to become more urbanized in the future (City of Portland, 1999). In the agricultural upper watershed, water is diverted for irrigation use during the summer, but there are no major impoundments or flood control projects. In the lower urban portions of the watershed, drainage infrastructure conveys water quickly to Johnson Creek during rainfall events. This results in greater extremes of flow, with higher flood flows and lower base flows than would have occurred under forested conditions prior to Anglo-European settlement.

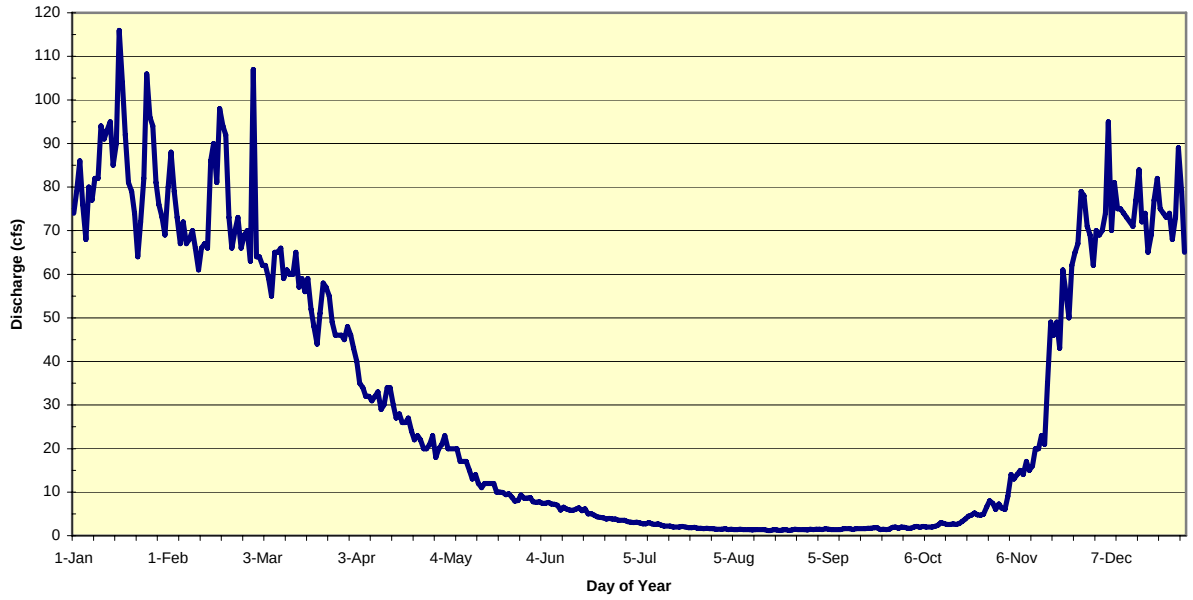
Within the project area, the channel has been physically altered (City of Portland, 2001b) (2001a):

> The most significant alteration was performed in the 1930s by the Works Progress Administration (WPA), when Johnson Creek was subjected to extensive rock-lining, channel deepening, and straightening to control flooding. These activities caused adverse impacts to the natural resources and ecological integrity of the creek, yet flood damage continued. Continued development has further changed the creek's hydrological capacity to rapidly move large volumes of water through the watershed to the detriment of residents, fish and wildlife, and water quality.

Observations made within the project area suggest that the channel was deepened, may have been widened somewhat, and the sides armored to improve conveyance, resulting in disconnection with the floodplain. The channel planform was fixed by armoring the streambank, although the fixed planform remained sinuous. Sinuosity, or the ratio of channel length to valley length, is 1.96 upstream of SE 106th Avenue (City of Portland, 2001b). In the 1970s, the channel was realigned and straightened downstream of the project site during construction of I-205. A channel cutoff upstream of SE 112th was constructed in 1997 co-incident with construction of the Brookside storage pond. Additional channel changes that have occurred since European settlement are outlined by the City in TM1 (City of Portland, 2001b).

Average annual discharge as measured at the Sycamore stream gauge near the site is 39,400 acre feet, with maximum streamflow common in the late fall/early winter months of December and January, and minimum flows occurring in late summer months of August and September. The maximum flow was 2,620 cubic feet per second (cfs), recorded during the December 1964 flood, while the minimum recorded flow of 0.08cfs occurred in August 1966 (USGS, 2006). Discharge typically ranges between 60 and 120 cfs in the winter, while baseflow between mid-June and mid-October is <5 cfs, and commonly 2-4 cfs (Table 3.3-1 FLOW; USGS, 2006).

**Table 3.3-1 FLOW. Median Values of Average Daily Discharge @ Sycamore Gage**




To the north of Johnson Creek are permeable soils and deposits from Missoula floods (WCC, 1995). In this area, dry wells are commonly used to manage stormwater. These structures

promote infiltration and baseflows while filtering pollutants through geologic media. The City currently has a permitted Municipal Separate Storm Sewer System (MS4), under which it is required to improve stormwater quality to the maximum extent practicable. This system provides storm drainage south of Johnson Creek and east of approximately SE 52nd. As redevelopment occurs within the City, stormwater quality improvements are made on a parcel-by-parcel basis by the addition of structural stormwater facilities. In addition, the City has programs to conduct non-structural BMPs on public property and to encourage citizens to practice BMPs on their own properties. Throughout the site, stormwater is shed off uncurbed roadways and infiltrates on to adjacent pervious lands.

Ambient water quality in Johnson Creek has been degraded due to activities within the watershed (Department of Environmental Quality (DEQ), 2004c and 2006a). This degradation is described in the Draft Willamette River Total Maximum Daily Load (TMDL) document (DEQ, 2004c):

> The DEQ Laboratory monitors Johnson Creek near the mouth (RM 0.2) as part of the statewide ambient water quality-monitoring program. Routine monitoring has been conducted at this location since 1990. In June 1998 the monitoring frequency increased to bimonthly. The Oregon Water Quality Index (OWQI) analyzes a defined set of water quality parameters and produces a score describing general water quality. The water quality parameters included in the OWQI are temperature, dissolved oxygen (percent saturation and concentration), biochemical oxygen demand, pH, total solids, ammonia and nitrate nitrogen, total phosphorous, and fecal coliform. OWQI scores range from 10 (worst case) to 100 (ideal water quality). Scores are further broken down as follows: 0-59 = "very poor", 60-79 = "poor", 80-84 = "fair", 85-89 = "good", and 90-100 = "excellent".
>
> Average OWQI scores for Johnson Creek are very poor throughout the year, with an average summer score of 26 and an average winter score of 31. Johnson Creek is impacted by consistently very high concentrations of nitrate nitrogen and high concentrations of total phosphorus, fecal coliform, total solids and biochemical oxygen demand. These conditions occur throughout the year. This indicates the introduction of inorganic and organic materials and untreated human or animal waste. OWQI scores were greater than 30 only fourteen percent of the time. With one exception (score of 61, "poor", on 1/29/96), all results were in the "very poor" range of OWQI scores. Results from the Seasonal-Kendall trend analysis show no significant change in water quality over the past eight years. This means that although water quality in Johnson Creek has not significantly deteriorated since 1990, neither has it improved.

Johnson Creek is on the current list of impaired water bodies in Oregon (DEQ, 2006a) for multiple constituents within the reach that includes the project area (Table 3.3-2 Water Quality). While no data were evaluated specific to the project reach (approximately river mile 7.1 to 8.0), water quality degradation is common throughout the urban portions of the Johnson Creek channel (City of Portland, 2006).

**Table 3.3-2 Water Quality Parameters Resulting in Impairment of Johnson Creek**

| Fully Impaired | Attains Some Uses | Potential Concern |
|---|---|---|
| DDT<br>Dieldrin<br>Bacteria (E. coli and fecal coliform)<br>Polynuclear aromatic hydrocarbons (PAHs)<br>PCBs<br>Flow modification | Ammonia<br>Chlorophyll a (summer only)<br>Dissolved oxygen (non-spawning gravel standard)<br>Lindane<br>pH | Alkalinity<br>Chlordane<br>Chromium (hexavalent)<br>Copper<br>Dioxins/Furans (including 2,3,7,8-TCDD specifically)<br>Iron<br>Manganese<br>Nickel<br>Phosphate phosphorus (summer only)<br>Toxaphene<br>Zinc |

Sources of several organochlorine compounds in the environment are identified in the upcoming Willamette River TMDL as primarily related to streambed sediments, which themselves have an upland (soil) source. DDT concentrations in sediments in Johnson Creek range from 11 to 510 µg/kg, with the highest concentrations found in agricultural areas upstream of the Gresham City limits. Dieldrin was also found to exceed preliminary effects concentrations (i.e., a common screening level at which toxic effects are found) only at an upstream site (Pugh, 2005). PCB concentrations in Johnson Creek exceed the screening level value of 7 µg/kg locally in the upper basin and regularly below river mile 3, with a maximum concentration in recent sampling of 406 µg/kg.

Johnson Creek contributes to impairment of the Willamette River with respect to bacteria, temperature, and mercury. These constituents have been removed from the newly issued 303(d) list because waste loads will be allocated within the basin in the TMDL (DEQ, 2004a, b, DEQ, 2006b). The waste load allocation for temperature requires a reduction of 3.8°C in ambient summer temperature at the mouth of Johnson Creek. Mercury load reductions of 26.4% are required throughout the Willamette River basin. A waste load allocation is also being developed for DDT (also considered to be protective for dieldrin) that calls for a 94% reduction in DDT loading or a target maximum instream concentration of 15 mg/L total suspended solids in Johnson Creek from all sources other than the MS4 system (DEQ, 2004c). The remaining constituents for Johnson Creek is fully impaired (i.e., on the 303(d) list), excluding flow modification, may be subject to the development of waste load allocations within the TMDL process in the future.

Land use alterations, hydrologic alterations, and water quality impairment within the Johnson Creek watershed are linked. Removal of riparian vegetation and reduction of summer baseflows are directly linked to increased summer water temperatures. Soil erosion results in loading of biodegradable materials and nutrients resulting in excessive instream levels of ammonia and phosphate, elevated pH, and algal growth associated with elevated chlorophyll a and depletion of dissolved oxygen when that degrades. In addition, soil erosion contributes to increased loading of bacteria, organichlorine compounds and metals to the creek. Rapid runoff from paved surfaces brings hydrocarbons, dioxins, furans, and metals. Finally, infrastructure that promotes

rapid transport of runoff to streams prevents bacteria in the runoff from contacting and being degraded in watershed soils as would have occurred under natural overland flow conditions.

Nearly the entire project area is within the 100-year floodplain of Johnson Creek, and much of the site is within the floodway. Three small areas are mapped outside of the 100-year floodplain on the basis of elevation, with some of these areas inundated by the 500-year flood (FEMA, 2004a). These areas are located: a) just south of the creek along SE 106th Avenue; b) in the southwest corner of the property at 6615 SE 106th Avenue; and c) in an area north of the creek on the west half of the parcel at 6521 SE 108th Avenue, continuing on to the adjoining parcel to the north. The flood insurance study was revised for the City of Portland in 2004 (FEMA, 2004b). This study was revised for particular flood elevations along Johnson Creek in response to observations made during the February 1996 floods. Elevations of the 100-year flood range from approximately 210.5 feet NAVD at SE 106th Avenue to 215.8 feet NAVD at SE 112th Avenue. Restrictions in flood flows are most pronounced at the SE 108th Avenue Bridge. The difference in flood elevation between the 10-year and 100-year floods is at least 3 feet downstream of this bridge, and only approximately 1 foot upstream of this bridge.

## Environmental Consequences:

### Alternative 1 – No Action

The No Action Alternative would have no direct impact on water resources beyond existing and proposed future conditions. Floods would traverse the Project Area in the existing patterns, leading to numerous nuisance floods. Infiltration of winter streamflows into the floodplain would remain limited by the entrenchment of Johnson Creek and associated limited floodplain connectivity and by the revetment lining the creek. This in turn would continue to result in the presently observed low summer baseflows. Upstream projects planned or recently constructed by the City (e.g., Kelley Creek floodplain reconnection, Alsop-Brownwood Restoration Project) might result in slight moderation of the hydrologic regime at the site, but no substantial decrease in flood frequency or increase in summer baseflows would occur with the No Action Alternative.

The No Action Alternative provides for a slight reduction in loading of pollutants as willing sellers leave the neighborhood, traffic decreases on the surface streets, and vegetation density increases and soil erosion decreases in cleared areas. No improvement in water quality would accrue from the deposition of polluted streambed sediments on the Johnson Creek floodplain.

No substantial change in the 100-year floodplain is expected to occur with the No Action Alternative. Minor improvements in conveyance of very large (e.g., 50-year and larger) floods could occur as willing sellers in the Project Area convey property with structures to the City, and the City subsequently removes these structures. No change in the magnitude, frequency, and duration of nuisance floods would occur.

### Alternative 2 – Proposed Action

The Proposed Action provides multiple long-term benefits with respect to water resources within the project area, and within the larger context of the lower Johnson Creek watershed. The project provides for substantially greater floodplain connectivity between Johnson Creek and the adjacent land within the project area.

The Proposed Action is designed to reduce flooding of nearby SE Foster Road, and provide some downstream flood reduction benefits in the Lents neighborhood, through improved in-channel and floodplain storage of floodwaters.

The improved floodplain connectivity increases infiltration of floodwaters, which can in turn improve baseflow conditions within and downstream of the project area. Removal of the bank revetment may also facilitate recharge of baseflow during late spring and early summer.

The Proposed Action returns geomorphic processes necessary for the maintenance of healthy instream and riparian habitats to the project area. The processes of channel migration, overbank flooding, and maintenance of riparian vegetation would allow for improved nutrient cycling, the development of hydraulic and structural diversity over a range of flood flows, and the potential for the deposition of spawning-sized gravel within the channel. In addition, improved shading of Johnson Creek improves instream temperature conditions, as required by the TMDL load allocation.

Floodplain connectivity facilitates deposition of suspended sediment on the floodplain, with ultimate sequestration of this sediment on the floodplain. This can improve instream water quality. The relatively poor quality of sediment within Johnson Creek could gradually be deposited on the floodplain. Streambed sediments are composed in part of naturally occurring metals, which would become a natural part of soils containing the same metals when deposited on the floodplain. While metals like copper, zinc, and mercury can be toxic to aquatic organisms at very low concentrations, they represent natural trace minerals for terrestrial ecosystems. Nutrients deposited in a terrestrial environment would promote plant growth rather than growth of instream nuisance algae that leads to harmful aquatic concentrations of dissolved oxygen, pH, and ammonia. Other constituents, including bacteria and PAHs, exhibit some photodegradation in a subaerial environment. The more persistent organochlorine compounds would not likely be enriched over existing onsite soil concentrations, and would therefore result in no increase risk to ecological receptors.

At the same time, there would be short- and intermediate-term construction-related impacts to water quality. Grading of the stream banks and floodplain leaves considerable area vulnerable to erosion. Compliance with the City's construction stormwater permit (1200-CA, issued by the DEQ) would be required. This permit requires development of a comprehensive erosion and sediment control plan which the City has already completed. In addition, the City of Portland has a very strict erosion and sediment control ordinance which sets forth a standard for construction of, "No visible and measurable sediment or pollutant shall exit the site, enter the public right-of-way or be deposited into any water body or storm drainage system" (Chapter 10.30.A(1)).

Grading of streambanks typically results in exceedances of the state water quality standards for turbidity (i.e., 10 percent above background) not only after construction, but for several years post-construction while streambanks reach a final stable configuration and streambank vegetation becomes established (Oregon Administrative Rule [OAR] 340-041-0036). During this time, the standards can be waived for activities permitted under the Clean Water Act (CWA) sections 401 and 404 (OAR 340-041-0036(b)). Obtaining such a permit typically requires that erosion control measures be implemented to the maximum extent practical; these requirements begin during construction, and extend both immediately afterward and for a period of time necessary for site restoration. Impacts to turbidity would be moderate immediately following

construction, and remain minor for a period of several years following construction, following the Impact Intensity Threshold Criteria (Table 3.0-1).

Because the water quality changes associated with the Proposed Action would be regulated and allowed by permit, and because the City has a track record for managing stream restoration projects without substantial water quality impacts, these short- and intermediate-term water quality impacts are not considered to be significant.

For compliance with Executive Order 11988 Floodplain Management and the City's floodplain management ordinance, the project would be designed to result in no net rise for the 100-year floodplain, and no encroachment on the floodway consistent with a resultant long term beneficial affect to floodplain values. Loss of conveyance associated with improved riparian and floodplain vegetation would be compensated for by the larger channel cross-section associated with the two-stage channel, and removal of structures within the floodplain following property acquisition through the willing seller program. It is anticipated that the permitting and BMPs mentioned above will provide the necessary minimization measures for the adverse short term impacts to floodplain values.

## 3.4 WETLANDS

The National Wetland Inventory mapping for the Gladstone 7.5-minute topographic quadrangle (USFWS, 1981) only identifies Johnson Creek within the project area as a wetland resource (e.g., waters of the U.S and State of Oregon). No other wetlands or waters are identified within the project area. Johnson Creek is classified as Riverine, Upper Perennial, Open Water, and Intermittently Exposed/Permanent (R3OWZ). No Local Wetland Inventory is available for this area (DSL, 2006).

A site investigation was completed that identified 25 wetlands, Johnson Creek, and three ditches within the project area. Johnson Creek is considered a "Waters of the U.S. and State of Oregon." The principal characteristics of each of the identified wetland and water features are presented in Appendix B and associated Figure in Appendix A.

For several of the wetland features, the wetland boundaries identified in this determination are based largely upon the presence of hydrophytic vegetation and hydric soils. Due to the timing of the site investigation most areas within the project area lacked strong or apparent primary indicators of wetland hydrology (e.g., high water table or saturated soils within 12 inches below the ground surface, or surface inundation). Secondary indicators of wetland hydrology (e.g., water stained leaves, FAC Neutral Test, algal matting) were noted when observed. However, these indicators were not always sufficiently present to positively confirm the presence of wetland hydrology. As such, the wetland field team determined that a lack of apparent wetland hydrology could not be considered sufficient to disqualify an area as wetland when other factors such as topographic position and secondary wetland hydrology indicators are taken into account. In light of these site conditions, wetland hydrology was assumed present in areas possessing a hydrophytic plant community and hydric soils. Of those acres in the project area meeting the above criteria for wetland, the project footprint would directly impact approximately 3 acres of predominately palustrine emergent wetlands classification (Appendix B).

**Clean Water Act**

Section 404 of the CWA regulates the discharges of dredged or fill material into all "waters of the U.S.," including wetlands. Authorization to fill wetlands and waters are granted from the Secretary of the Army, acting through the Chief of Engineers for the Army Corps of Engineers (USACE).

Based on the proposed level of impact to wetlands and floodplain modification of Johnson Creek, USACE would require that BES apply for an Individual Permit (IP). An IP is reviewed through the USACE's comprehensive review procedures, which includes public notice, opportunity for a public hearing, and receipt of comments.

BES' Streamlining Team has representation from the USACE and prior to implementation of the project a full delineation and function assessment would be undertaken for compliance with Section 404(b)(1). Mitigation for the project is expected to be through the project design and no additional mitigation would be required.

## Environmental Consequences:

**Alternative 1 – No Action**

The No Action Alternative would have no effect on wetlands in the project area beyond the continuation of flooding with in the project area.

**Alternative 2 – Proposed Action**

With the Proposed Action, excavation within the wetlands would directly affect approximately 3 acres of wetlands. Wetlands that would be affected are outlined in Appendix C and mapped in Appendix A. This would be a moderate short-term impact with a long-term benefit in the reestablishment of floodplain and higher value wetlands within the project area.

## Mitigation:

This assessment incorporates a wetlands determination to evaluate wetland impacts. A delineation and functional assessment are generally required for impacted wetlands to secure a permit under Section 404 b(1) guidelines of the CWA. The Streamlining Team will be required to make decisions as to how this project must proceed to meet Section 404 permitting requirements given the short-term impacts for removal of 95,000 cubic yards of material from existing wetlands and the long-term positive beneficial restoration of the floodplain and establishment of associated wetlands. Prior to any construction activities, the Section 404 permit application will need to be completed based on requirements from the regulatory Streamlining Team which has worked with these projects in the past and are already working with the components of this project. This wetlands determination concludes that approximately 3 acres of wetlands would be affected by the project but that the projects long-term goals and objectives would mitigate for that loss of wetlands. If the process for the Section 404 permit concludes that the long-term goals and objectives would not adequately mitigate for the loss, then a reevaluation of the additional scope and the finding of effects would need to be completed, in coordination with the USACE.

## 3.5 BIOLOGICAL RESOURCES

This section will disclose potential effects of the project on wildlife and aquatic species and associated critical habitat that are present within the project area. This assessment will disclose impacts relative to the Endangered Species Act (ESA) and the Magnuson-Stevens Act.

### Federally Listed Species

A list of federally endangered and threatened species with the potential to occur in the project area was obtained from the USFWS on May 1, 2006. In addition, on April 28, 2006 an Oregon Natural Heritage Information Center (ORNHIC) data system search of occurrence records was prepared that included federally listed species and other special-status species. Fisheries biologists with National Marine Fisheries Service (NMFS) and the Oregon Department of Fish and Wildlife (ODFW) were contacted to verify salmonid and critical habitat presence in the project area. Isaacs and Anthony's "Bald eagle nest locations and history of use in Oregon and the Washington portion of the Columbia River Recovery Zone, 1972 through 2001" was also referenced. According to these inventories, the federally listed wildlife and fish species that may be found within the project areas are disclosed in Table 3.5-1.

**Table 3.5-1 ESA Listed Fisheries Species Potentially Occurring in the Proposed Project Area**

| **Common Name**<br>*Scientific Name* | **Federal Status** | **State Status** | **Presence in Relation to Project Area** |
|---|---|---|---|
| **Lower Columbia River steelhead ESU (winter run)**<br>*Oncorhynchus mykiss* | LT | -- | Spawning<br>Rearing |
| **Upper Willamette River steelhead ESU**<br>*Oncorhynchus mykiss* | LT | -- | Migration<br>Rearing |
| **Lower Columbia River Chinook salmon ESU (fall run)**<br>*Oncorhynchus tshawytscha* | LT | -- | Migration<br>Spawning<br>Rearing |
| **Upper Willamette River Chinook salmon ESU**<br>*Oncorhynchus tshawytscha* | LT | -- | Migration<br>Spawning<br>Rearing |
| **Lower Columbia River coho salmon ESU**<br>*Oncorhynchus kisutch* | LT | LE | Migration<br>Spawning<br>Rearing |

Table 3.5-2, below, identifies ESA listed wildlife species potentially occurring in the project vicinity. The proposed project site will be evaluated for potential habitat conditions that would support this species.

**Table 3.5-2 ESA Listed Wildlife Species**

| **Common Name**<br>*Scientific Name* | **Federal Status** | **State Status** |
|---|---|---|
| **Bald eagle**<br><br>*Haliaeetus leucocephalus* | LT | LT |

### *Migratory Birds*

The project area provides habitat for a variety of migratory birds including songbirds and birds of prey. The USFWS Office of Migratory Bird Management maintains a list of migratory birds (50 CFR 10.13). The Migratory Bird Treaty Act (MBTA) of 1918, as amended, provides federal protections for migratory birds, their active nests, eggs, and parts from harm, sale, or other injurious actions; the MBTA has no take provision. Restoration activities such as vegetation removal have the potential to directly and indirectly affect migratory birds. However, potentially negative impacts to migratory birds can be eliminated or greatly reduced by not allowing construction activities during the most sensitive portion of the breeding season (early March through July). If seasonal restrictions are not practicable, a pre-construction survey to identify active nests should be conducted by a qualified biologist prior to any disturbing activities.

## Environmental Consequences:

**Alternative 1: No Action**

The No Action Alternative is expected to have no effect on biological resources in the project area.

**Alternative 2: Proposed Action**

The Proposed Action is expected to result in temporary adverse impacts to ESA protected salmonids, detailed in Table 3.5-1. These impacts will result in a "Likely to Adversely" effect determination for salmonids. Adverse impacts that could rise to the level of "take" should be limited to the year in which construction occurs. In agreement with NMFS, FEMA will be completing a biological assessment (BA) for this project using the City's existing "streamlining agreement" with federal and state agencies. The Proposed Action would be evaluated through a BA process initiated by BES and evaluated by NMFS with a resultant Biological Opinion (BO) being issued. BES will not proceed with construction of the project until all terms and conditions of the BO are incorporated into the proposed action. If any unusual circumstances or unknown impacts not fully disclosed in this assessment arise out of this streamlining process, BES will be required to notify FEMA for reevaluation of the project under NEPA.

No effects to wildlife species are expected. Long-term impacts of the Proposed Action are expected to be beneficial to listed and non-listed fish resources present in Johnson Creek and its tributaries. Since the project area has been urbanized and no identified nesting or roosting areas have been identified, the proposed project would have "no effect" on bald eagle.

## Mitigation:

All mitigation and minimization measures associated with impacts to federally listed species will be addressed in the BA and resultant BO. Additionally, the appropriate BMP's and mitigation measures required by the various permitting authorities will further reduce or eliminate impacts to the federally listed species. To avoid and minimize impacts associated with construction related activities and loss of fish bearing habitat, a Fish Salvage Plan and Fish Passage Plan will be developed in accordance with state and federal permits. In addition, a Fish Salvage Permit will be obtained from ODFW to authorize safe capture, handling, and transport of listed fish species.

## 3.6 CULTURAL RESOURCES

Prior to the site inventory, a review of existing information was conducted. The review included: (1) records stored at the Oregon State Historic Preservation Office (SHPO), Salem, (2) nineteenth-century General Land Office (GLO) plat maps, (3) historic aerial photos, (4) data from previous surveys, (5) records of archaeological sites in the vicinity, and (5) regional ethnographic, historic, and archaeological references.

The record search indicated that the project's Area of Potential Effects has not been previously surveyed and that no cultural resources have been recorded in the project area. A cultural resources survey and subsurface sampling was completed along Johnson Creek on lands adjacent to the east boundary of the project area, however no significant cultural resources were identified (Musil, 1996). An 1854 GLO plat map showed an historic structure owned by "Johnson" within the project area. Johnson homestead which was the first was located at the eastern edge of the project area and the intersection of wagon roads to Portland and Oregon City was located near the western edge of the property. Aerial photos documented the presence of historic and modern twentieth-century residences within the project area.

A pedestrian reconnaissance was conducted in April 2006. No cultural resources were identified as a result of this effort. Much of the project area appears to be disturbed through development and shows evidence of episodic flooding. Fill, presumably to elevate residences above the floodplain, was noted throughout the project area. Graded areas with scattered modern debris such as plastic, glass, and metal fragments are present where former residences were demolished and removed following acquisition by the City of Portland. Ground visibility was moderate to poor in portions of the project area due to dense vegetation, including ornamental and native species. While currently undeveloped, the area proposed for subsurface disturbance has been impacted historically and recently. Additionally, there is a moderate probability that buried cultural resources exist in this area based on both proximity to Johnson Creek and the presence of the historic Johnson homestead.

FEMA will be conducting a shovel survey during the public review of this project to fully understand the potential for cultural properties of the area. Although it is anticipated that no effect to these resources is expected, the results of the survey will need to be reviewed prior to issuing the finding of the EA.

### Environmental Consequences:

**No Action Alternative**
It is anticipated that the No Action and Proposed Action Alternative would result in no effects to cultural resources, pending results of the shovel. Should any discoveries be made during the shovel testing or project construction, FEMA will provide further public involvement in any subsequent follow up action.

## 3.7 HISTORICAL RESOURCES

The East Lents project area is located with in the Johnson Creek Linear District. The linear district consists of the 15-mile stretch of Johnson Creek from its confluence with the Willamette River in Milwaukie, Oregon to river mile 15 near Gresham, Oregon. This 15-mile section of the creek includes the Johnson Creek flood control project completed in 1934 by the Depression era, federally sponsored WPA State Emergency Relief Act (SERA) and Civil Works Administration.

This work included straightening, deepening, and simplifying some sections of the creek, and lining the creek with basalt rock riprap. At other locations, dikes were constructed to contain and control the creek at high flow, and streamside vegetation was removed.

The East Lents section of Johnson Creek is an integral part of the Johnson Creek 1930s flood control project that was implemented as part of the SERA and Civil Works Administration work programs. The section of Johnson Creek that includes the 1934 flood control project was determined eligible for listing in the National Register of Historic Places (NRHP) by Archaeological Investigations Northwest, Inc., under contract with Sprint in compliance with the Federal Communication Commission (FCC) as part of a cell-tower planning project (Sprint Wichita Feed). The SHPO concurred with the determination of eligibility on August 14, 2003 through a Section 106 documentation process.

The East Lents Restoration Project includes implementing flood management elements consisting of two general projects: 1) modification to the existing channel, and 2) modifications to the adjacent floodplain. Only the first component, the modification of the channel, would impact the 1930s SERA and Civil Works Administration rock riprap in the channel. The existing steep banks would be excavated to create two inner-benches. This would require substantial re-shaping of the cross-section of the main channel of Johnson Creek and removal of the 1934 rock riprap on the south side of the creek; some of the rockwork may be retained on the north side of the creek channel along SE Foster Creek for erosion protection but most would be removed.

## Environmental Consequences:

**No Action Alternative**
With the No Action Alternative, there would be no modifications to historic resources and therefore, no effects would occur.

**Proposed Action Alternative**
An application of the criteria of effect indicates a finding of "No Historic Properties Adversely Affected" for the East Lents project area of Johnson Creek, a linear resource that has been determined eligible for listing in the NRHP because of its historic significance and engineering features. This application of the criteria effect indicates a finding of No Adverse Effect (Appendix C) for the selected Built Alternative for the East Lents Project Area of Johnson Creek Linear District.

## Mitigation

The SHPO has agreed to a finding of No Historic Resource Adversely Effected based on the conditions outlined below.

1) Survey and inventory the entire .67 mile stretch of Johnson Creek in East Lents project area prior to any future engineering studies and construction work. The condition and extent of the dressed rock Depression-Era riprap should be documented, mapped, and photographed.
2) Evaluates how much of the rock riprap in the project area retains integrity. Consult with the SHPO and the City's cultural resource staff. Determine how much of the intact sections of riprap could be protected and/or preserved in the creek restoration project.
3) Develop interpretive signage about the WPA Johnson Creek flood control project and

place signage in a highly visible public location either in a park adjacent the creek or along a section of Johnson Creek that parallels the Springwater Corridor Trail.

## 3.8 HAZARDOUS WASTES AND MATERIALS

The project area is currently comprised of City owned and privately owned properties in a rural residential setting. The privately owned properties may contain houses, outbuildings, and ponds on some properties. Since 1997 the City has acquired and continues to acquire properties through its Willing Seller Program. BES and the Bureau of General Services (BGS) manage this program. Currently the City owns approximately 50 properties in the project area. The project area is served by Portland General Electric (PGE) power, Northwest Natural gas (NW), City of Portland drinking water, and limited City of Portland sanitary system. The power lines are pole mounted and generally run parallel with the road, however in some instances the wires cross the road. Transformers are located on some of the poles. Natural gas line run underground and generally parallel the road with laterals extending to the houses. Two piezometers are located on City owned properties and are used to monitor groundwater levels.

Before purchasing the properties, the City performed Preliminary Environmental Site Assessments (PESA) to identify known or potential hazardous materials, including but not limited to Underground Storage Tanks (USTs), Aboveground Storage Tanks (ASTs), wells, septic systems, cess pools or ponds, and any spills or releases of hazardous substances or petroleum products on the subject property. The assessments include a search of City files for permits. However, the project area was incorporated into the City of Portland sometime in the late 1970s and thus permits for wells, USTs, septic systems etc. were not likely issued. In addition, an Asbestos Containing Material (ACM) and lead-based paint survey may be recommended based on the age of the structure. If warranted, a Phase I ESA is performed in accordance with ASTM 1527-00. In the event a UST is identified on the site, the tank is removed by a licensed contractor and backfilled with fill dirt. If a septic system or cess pool is identified, it is pumped and left in place. Wells are left in place. Any ACM or lead based paint that tested positive is properly removed from the home and disposed of at an approved facility. The structure is demolished in most cases or deconstructed allowing reuse or recycling of building materials, or moved off-site by a licensed contractor. BGS maintains all receipts and disposal manifests for demolished houses, removed USTs or ACM. Once the structure(s) are gone, the site is seeded and maintained by the Watershed Revegetation Program.

A review of the available PESAs, Phase I and Phase II investigations as provided by BES, indicates there are no USTs or septic systems located on the City owned properties. USTs were removed from the Rollin' Tire property and a Phase II investigation was conducted due to documented gasoline contaminated soils and groundwater. The site was cleaned up, but limited quantities of contaminated soil were left in place due to the obstruction of a sewer main and the poor structural integrity of the road surface. In 2000, the site received a No Further Action (NFA) letter from Oregon DEQ.

### Environmental Consequences:

**Alternative 1: No Action**

The No Action Alternative would have no effect on hazardous materials in the project area.

**Alternative 2: Proposed Action**

Hazardous materials and toxic wastes are managed under state and federal permitting requirements for staging, handling, storage, treatment, and disposal. The Resource Conservation and Recovery Act (RCRA) would regulate any hazardous wastes encountered. The objective of RCRA is to prevent release and impacts from hazardous materials to human health and the environment.

The implementation of the proposed activities would include ground-disturbing activities but would not disturb any known hazardous materials or create any long-term potential hazard to human health. If hazardous constituents are unexpectedly encountered in the project area during construction operations, appropriate measures for the proper assessment, remediation, and management of the contamination would be initiated in accordance with applicable federal, state, and local regulations. The contractor would utilize BMPs to prevent, minimize, and control the spill of hazardous materials in the construction staging area, according to the specifications of applicable permits required for the project. There is a low potential for unknown USTs or septic systems/cess pools on individual properties. In the event these are encountered during construction, appropriate measures would be initiated following the City's removal of underground installations protocol.

A spill containment and control plan will be available with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be on site, proposed methods for disposal of spilled materials, and employee training for spill containment. Also available will be a description of any regulated or hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.

## 3.9 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Executive Order (EO 12898, Environmental Justice), directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations in the United States resulting from federal programs, policies, and activities. The No Action Alternative (Alternative 1) and Proposed Action Alternative (Alternative 2) are both located within the City of Portland. Socioeconomic and demographic data for residents in the project vicinity was studied to determine if a disproportionate number (defined as greater than 50 percent) of minority or low-income persons have the potential to be affected by the alternatives.

Demographic Breakdown

Based on the 2000 Census, the population of the Lents area is approximately 52,500. Of that, 25% of the population were people of color. The population living directly in the flood plain is 25,000. The Lents neighborhood has an overall poverty rate of 15.5%. Census tracts within Lents have poverty rates ranging from 11.4% to 30.4% compared to Multnomah County's 12.7%. Median Family Income is $36,000 compared to $42,000 for Multnomah County. Thirty-four percent of children younger than 18 years live below the federal poverty level, compared

with 26.5 for the rest of the city. Unemployment in Multnomah County was 5.6% (March 2006). This is higher than the state of Oregon rate of 5.5 (March 2006); the U.S. rate was 4.7% (March 2006). The Oregon rate is also one of the highest in the nation.

In the Lents Urban Renewal Area (URA), the percentage of the population that is White, non-Hispanic decreased between 1990 and 2000 from 85% to 68%. It is projected to decrease to 55% by the year 2009. Hispanics or Latinos made up the second most prevalent race or ethnicity at 10% of the population in 2000. People of Asian races or ethnicities made up 6% of the population in 2000. Housing and income patterns of Some Other Race are very similar to Hispanics or Latinos. The percentage of Black or African Americans and American Indians in the Lents were 2% and 1% respectively and are not projected to change.

Willing Seller Land Acquisition Program

BES is committed to maintaining the highest standards of respect for the dignity of every individual. Since November 2000, BES has been working with the Lents community and other City bureaus to develop flood management alternatives as part of the Portland Development Commission Lents Urban Renewal Project. The project area includes a patchwork of residential, commercial, industrial, and vacant parcels. The City of Portland owns 40 percent of the property needed for the project (DEA/ECO Northwest, 2004). The properties were acquired through a Willing Seller Land Acquisition Program. To date, no land has been acquired through condemnation.

In 1997, the City of Portland developed a Willing Seller Land Acquisition Program to purchase frequently flooded properties. The program, the Johnson Creek Restoration Plan Willing Seller Program is an implementation strategy of the Johnson Creek Restoration Plan (JCRP). The Willing Seller Program outlines the procedure for land acquisitions which work toward meeting the JCRP targets. It is the guiding document for land acquisition in the Johnson Creek watershed. Target areas were developed through extensive hydrologic analysis are the basis for property acquisition. Once contact is made with a potential willing seller, individual properties are evaluated and ranked based on several criteria: 1) the property owner is a willing seller; 2) adequate funding and partnership opportunities are available; 3) the property is within a target area and is suitable for floodplain reconnection, habitat restoration, and/or passive flood storage; and 4) supplemental reasons exist which support acquisition of this property (e.g., community support, recreation potential, imminent development) (BES, 2001).

Since 1997, the Willing Seller Land Acquisition Program has been actively purchasing properties in the watershed. To date more than 160 acres have been acquired and over 49 households have been assisted in moving out of harm's way of flooding. No homeowners have been displaced involuntarily.

Based on analysis of demographic data, there is no evidence that any one group has been singled out during property acquisition.

### Environmental Consequences:

The No Action Alternative and Proposed Action Alternative would not adversely affect a disproportionate number of minority or low-income persons.

## 4.0 CUMULATIVE IMPACTS

The CEQ regulations for implementing NEPA requires an assessment of cumulative effects during the decision-making process for federal projects. Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects are considered for both the No Action and Proposed Action. Cumulative effects were determined by combining the effects of the alternative with other past, present, and reasonably foreseeable future actions.

In 2001 the City published the Johnson Creek Restoration Plan. The Restoration Plan is an action plan focused on restoring natural functions of Johnson Creek. The Restoration Plan recommends projects along the entire main-stem of Johnson Creek that are designed to meet the goals of reducing the impacts of nuisance flooding, improving water quality, and improving fish and wildlife habitat. The plan identifies Lents, east of I-205, as one of eight priority project areas for focusing restoration efforts.

Flood management at the proposed project area is one of several projects planned for the entire length of Johnson Creek. Upstream of Lents, the Kelley Creek Confluence Restoration Project was constructed in summer 2004 near SE 159th. Immediately upstream of Kelley Creek, the Alsop/Brownwood Project is in design phase. Downstream near SE 45th, designs are underway to protect an exposed major sewer pipe by restoring the creek through Tideman Johnson Park, and reconnecting floodplain habitat and springs to the main channel. Also near SE 45th, plans are underway to restore salmonids access to Errol Creek, a cool-water tributary to Johnson Creek. Along Crystal Springs Creek in Westmoreland Park, work is in the design phase to stabilize creek banks and improve salmonid habitat. These projects, and many more, will work together to restore some of the natural functions of Johnson Creek.

Project construction impacts on fisheries resources are expected to be temporary and minimal as recommended practices for construction and maintenance are employed. No activities that violate existing state or federal water quality standards are anticipated. The collective effects of construction related activities are not expected to significantly impair water resources and/or interfere with the productivity of the existing aquatic environment. Rather, project activities will benefit larger watershed functions in Johnson Creek.

Notably, an increase in urbanization throughout the Willamette River basin has either eliminated or adversely affected habitat for listed species (PNERC, 1998). Effects are greatest for the listed species living and reproducing below Willamette Falls, where urbanization has been most extensive. With respect to fish habitat, urbanization has resulted in increased point and non-point source water pollution, increased peak flows, reduced base flows, channel erosion, landslides, channelization, and reduced habitat complexity and availability. Although this project by itself will not restore properly functioning conditions watershed wide, nor will it halt the decline of listed species throughout the lower Willamette River basin and Columbia River basin, the Proposed Action will incrementally restore and enhance critical fish bearing habitat, and adjacent riparian and floodplain habitat in Johnson Creek watershed. No cumulative effect beyond a short-term construction related effect and a long-term beneficial effect are anticipated.

## 5.0 REQUIRED PERMITS AND COMPLIANCE

The City is required to obtain and comply with all required local, state, and federal permits and approvals prior to implementing the Proposed Action Alternative. Development at the Proposed Action Alternative site shall be in compliance with the approved site plan. Any expansion or alteration of this use, beyond that initially approved would require a new or amended permit. BES must provide consultation with NMFS and SHPO as described in the above sections. In the event that historically or archaeologically significant materials or sites (or evidence thereof) are discovered during the implementation of the project, the project shall be halted immediately and all reasonable measures taken to avoid or minimize harm to property. The City would then be required to consult with FEMA and OAHP for further guidance.

Permits that may be required include:

- CWA Section 404 Permit prior to conducting any work in the delineated wetlands, which will include consultation with USFWS, EPA, and the Tribes.
- Section 7 BA and BO from NOAA
- ODFW Fish Salvage Permit
- CWA Section 401 certification by DEQ of federal issuance of the Section 404 Permit
- State DSL Removal-Fill permit
- State ODFW concurrence with the Removal-Fill and Section 404 Permits
- Non-conforming Use Permit – issued by Multnomah County
- Grading and Erosion Control Permit – issued by Multnomah County
- Submission of project-specific documents necessary to comply with DEQ's general 1200-CA construction stormwater permit
- Floodplain Development Permit – issued by Multnomah County

## 6.0 PUBLIC INVOLVEMENT

FEMA is the lead federal agency for conducting the NEPA compliance process for the floodplain restoration project. As the lead agency, FEMA expedites the preparation and review of NEPA documents, responds to the needs of residents surrounding the project area, meets the spirit and intent of NEPA, and complies with all NEPA provisions.

A public notice is required for this draft EA. The public will be provided an opportunity to comment on the EA for 30 days after the publication of the public notice. The notice identifies the action, location of the proposed site, participants, location of the draft EA, and who to write to provide comments.

FEMA will review all written comments submitted for identification of any significant issues that need to be addressed and will incorporate them into the Final EA, as appropriate. This project is part of the Johnson Creek Restoration Plan, published June 2001. Extensive public involvement went into that plan. The draft plan was released for comment at the 2000 Johnson Creek summit. Presentations were made to local neighborhood associations and to the leadership of the other jurisdictions in Johnson Creek. Several other flood mitigation projects have been implemented - specifically Brookside Wetland (completed in 1998), just east of this project, and Kelley Creek (completed in 2003), just off Foster Rd at 159th. Extensive public involvement was done for each of these with local residents and area stakeholders.

Over the last 6 years the City has participated in dozens of public meetings, special events, and citizen advisory committee meetings with this project as a focus for Urban Renewal.

Public meetings and notices include:

- Attendance at quarterly meetings of the Lents Urban Renewal Advisory Committee. BES staff provides updates on flood mitigation projects.
- Attendance at the annual Lents Resource Fair in February. BES staff provides information about flood insurance maps, floodplain restoration projects, and watershed health issues.
- Attendance at monthly Johnson Creek Watershed Council meetings. BES staff provides updates to the group on BES watershed restoration work.
- Attendance at bi-monthly Friends of Zenger Farm meetings. BES staff leads education programs which include information about wetlands and floodplains.
- April 28, 2006 scoping notice appeared in local area newspapers and was sent directly to private individuals within the project area.
- Educations of homeowners within the project area regarding the Willing Sellers Program has been ongoing.

## 7.0 MITIGATION MEASURES

The City will be required to complete a Section 7 consultation process with NMFS for species identified within this assessment. Prior to appropriating funding this process will need to be completed and the results incorporated into the implementation and construction plan.

Prior to construction a survey and inventory of the .67 mile stretch of Johnson Creek in the East Lents project area will need to be completed. The condition and extent of the dressed rock Depression-Era riprap should be documented, mapped, and photographed in consultation with the SHPO.

This project is also contingent on the findings of the cultural resource inventory that will take place during the review of this document.

Additional mitigation measures beyond those identified in the resource sections above include avoidance, minimization, and restoration. These additional avoidance, minimization, and restoration activities are outlined in the site preparation and restoration, erosion, sediment and pollution control, and work-area isolation plans which the City has completed as a planning tool for this and other completed project in the Johnson Creek area. Where sensitive resources are present in the area of impact, efforts would be made to avoid the resources, where practicable. If avoidance is not practicable, measures would be taken to minimize the impact. The City has developed BMPs required for implementation on all City projects. The BMPs that pertain to this project are briefly described below. The City's Erosion Control Manual and other plans mentioned above will also contain additional details about BMPs (City of Portland, 2000). The BO will have additional terms and conditions regarding fish salvage, in water work isolation, and avoidance recommendations that will need to be incorporated. BA process initiated by BES and evaluated by NMFS with a resultant BO being issued. BES will not proceed with construction of the project until all terms and conditions of the BO are incorporated into the proposed action. If any unusual circumstances or unknown impacts not fully disclosed in this assessment arise out of this streamlining process, BES will be required to notify FEMA for reevaluation of the project under NEPA.

### Best Management Practices

- Install measures intended to keep soil on site or out of water bodies, storm drainage systems, or the public right-of-way as the first step in any development. These measures shall be made functional prior to any upslope development taking place.
- Remove any soil that enters the public right-of-way.
- Protect stormwater inlets that are functioning during the course of the development by approved sediment control measures so that sediment-laden water cannot enter the inlets without first being filtered.
- Apply permanent or temporary soil stabilization to denuded development site areas in conformance with the following schedule:
    - Between October 1 and April 30, all denuded sites shall immediately be provided with either temporary or permanent soil stabilization.
    - Between May 1 and September 30, temporary erosion and sediment control measures to reduce dust and sediment transport shall be applied as soon as

practicable, but in no case more than seven days after ground disturbing activity occurs.

- Ground cover shall be installed on any portion of a site that is denuded for more than six months. Sports fields or playgrounds surrounded by vegetative cover or permanently installed curbing are exempt from this requirement.
- Temporary measures shall be maintained until permanent measures are established.
- Permanent non-permitted ground disturbing activities may achieve compliance with the standards set out in subsections a-e above, with the installation and maintenance of approved permanent BMPs that meet the purpose of this Title.

- Plant replacement vegetative cover that does not include plants listed in either the Nuisance or the Prohibited Plant List, as set forth in the City of Portland Plant List. Agriculture, timber production, or residential crop-growing activities are exempted from this requirement.
- Stockpile topsoil and subsoils separately during excavation. Replaced stockpiles soils in same order.
- Secure or protect soil stockpiles throughout the project with temporary or permanent soil stabilization measures. The responsible party is accountable for the protection of all stockpiles on the site, and those transported from the site. Depositions of soil may be subject to additional regulations requiring permit, review or erosion and sediment control.
- Select additional suitable erosion and sediment control BMPs from the City's Erosion Control Manual (City of Portland, 2000).
- Post signage on the site of the permitted ground-disturbing activity that identifies the City's Erosion Control Complaint Hotline number or the responsible City project manager/inspector.
  - Post a sign on the site that is clearly visible from the right-of-way. The sign shall be at least 18" by 18" and made of materials that shall withstand weather for the duration of the project. Lettering shall be at least 3" high and easily readable. Signs shall be color coded or otherwise marked to identify the appropriate enforcing bureau; or provide
  - Another visual notification method approved by the Director of the designated enforcing bureau.

## Other Required Mitigation Measures

Any fill or removal and most other alterations within jurisdictional wetlands require a Joint Removal/Fill permit from the USACE and DSL. Mitigation measures in addition to those described in the BMPs above, or included within the site restoration component of the proposed project are not likely, but could be possible permit conditions depending upon the specific impacts associated with final project design.

## NEPA Conditions

Any change to the approved scope of work would require re-evaluation for compliance with NEPA and other laws and Executive Orders.

## NHPA Conditions

If ground-disturbing activities occur during construction, applicant would monitor ground disturbance and if any potential archeological resources are discovered, would immediately cease construction in that area and notify the State and FEMA.

## 8.0 CONCLUSIONS

The draft EA evaluated potentially significant resources that could be impacted. The evaluation resulted in no identification of significant impacts associated with the resources of Climate, Geology and Soils; Vegetation; Water Resources; Wetlands; Biological Resources; Cultural Resources; Historical Resources; Hazardous Wastes and Materials; and Socioeconomics and Environmental Justice. Additional review and consultation as required by other federal laws (National Historic Preservation Act, Endangered Species Act, Clean Water Act, etc.) will be ongoing and is expected to result in an outcome supporting the initial findings outlined in this EA. Obtaining and implementing permit requirements along with appropriate BMPs will avoid or minimize any effects associated with the action.

After the comment period is concluded and should no significant issues be identified, FEMA will prepare a Finding of No Significant Impact (FONSI) under NEPA and will not prepare an Environmental Impact Statement.

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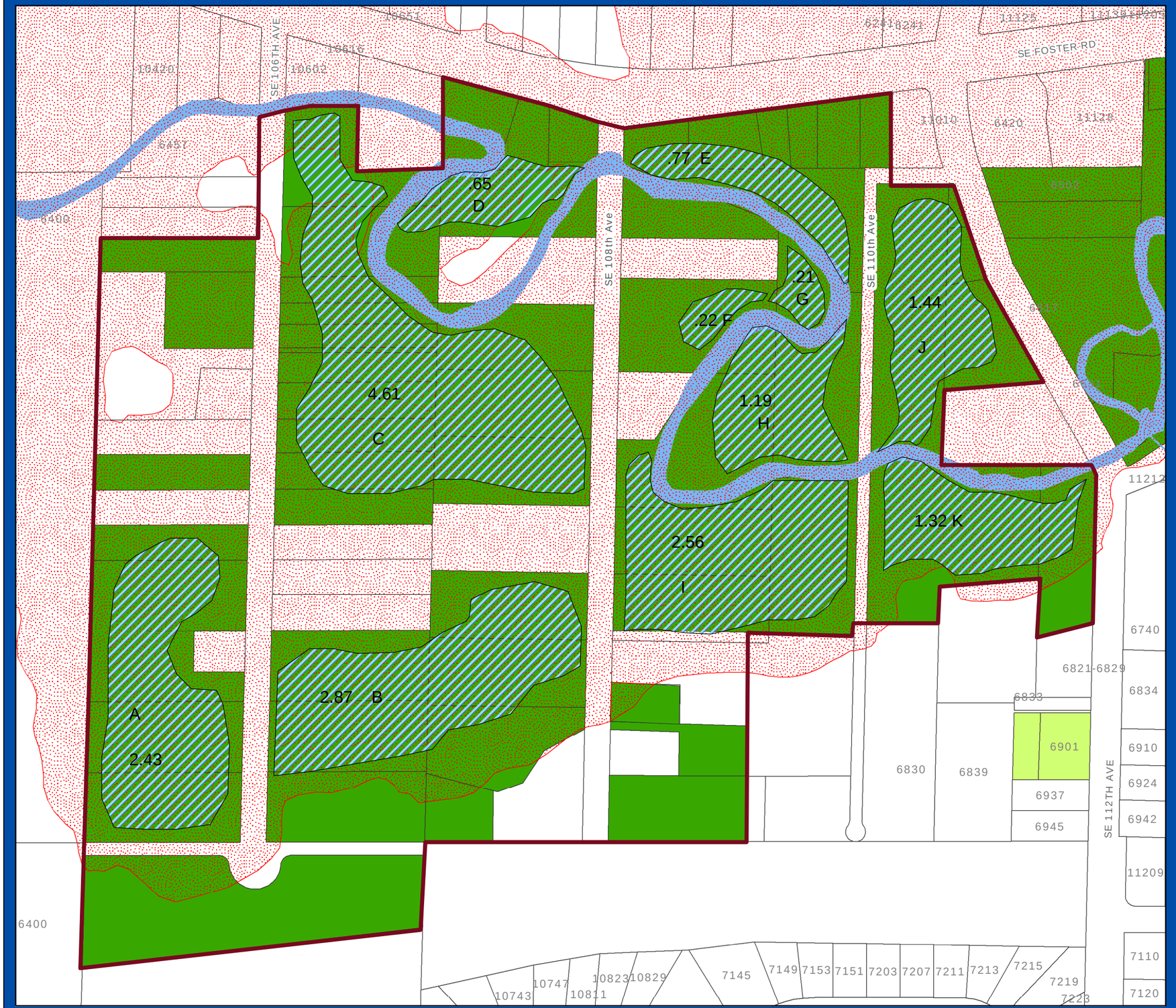



Overview Map

Portland 100yr Floodplain

Property Owned by Water

Property Owned by BES

Excavation Areas

* Project Boundary

* Project entails only those properties owned by the City of Portland within the Project Boundary.

River Length
3534 ft or .67 miles

**1 inch equals 197 feet**

East Lents Floodplain Mitigation Project

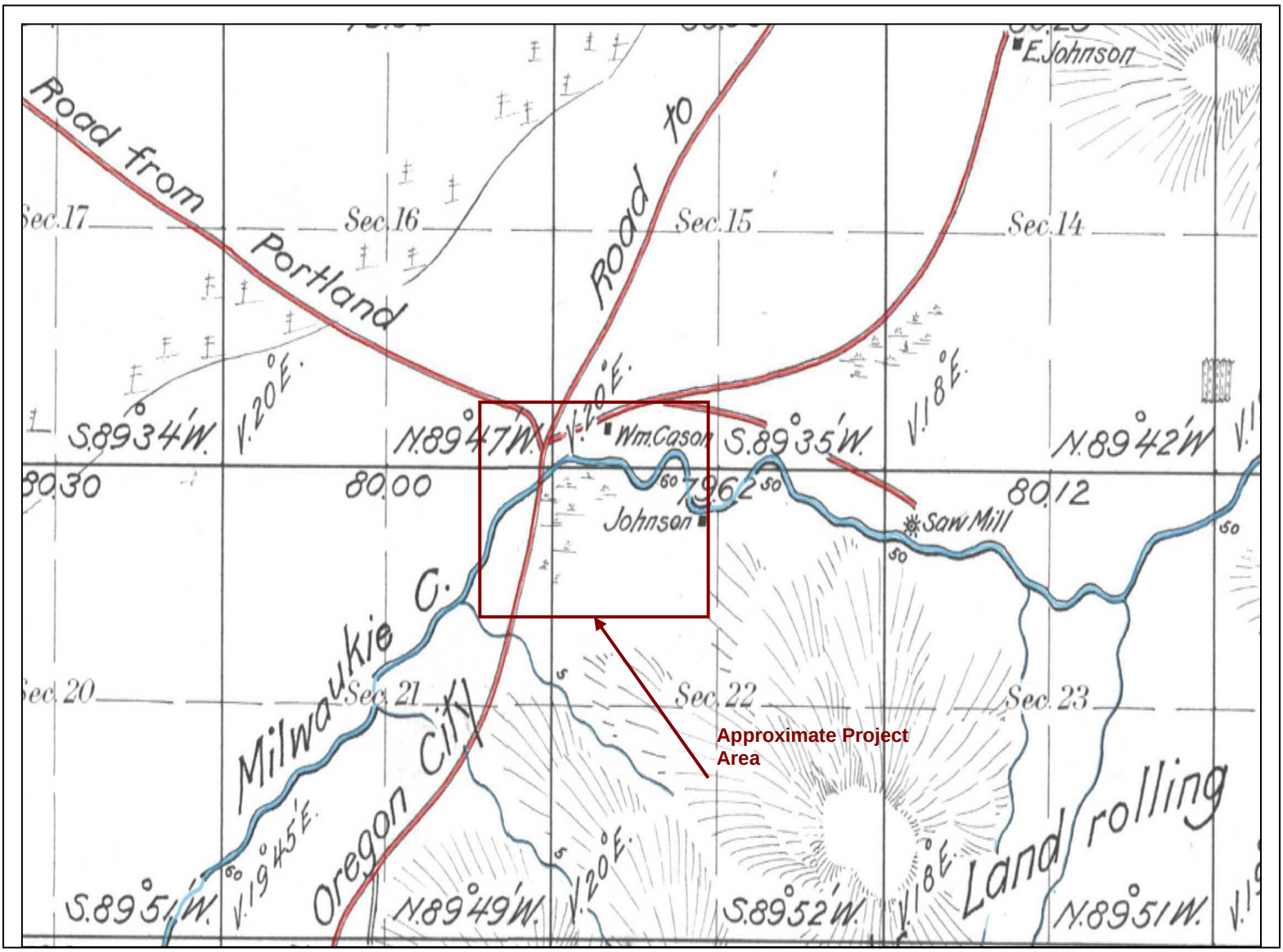
Figure 1: Project Area Map

*City of Portland*
*Environmental Services*

*Date Printed:*
May, 09, 2006

*Produced in ArcMap* S:\JC\ArcMap\Maps\FEMA PDM Project Area Map for URS.mxd

**Figure 2 Historical Map of East Lents Areas**



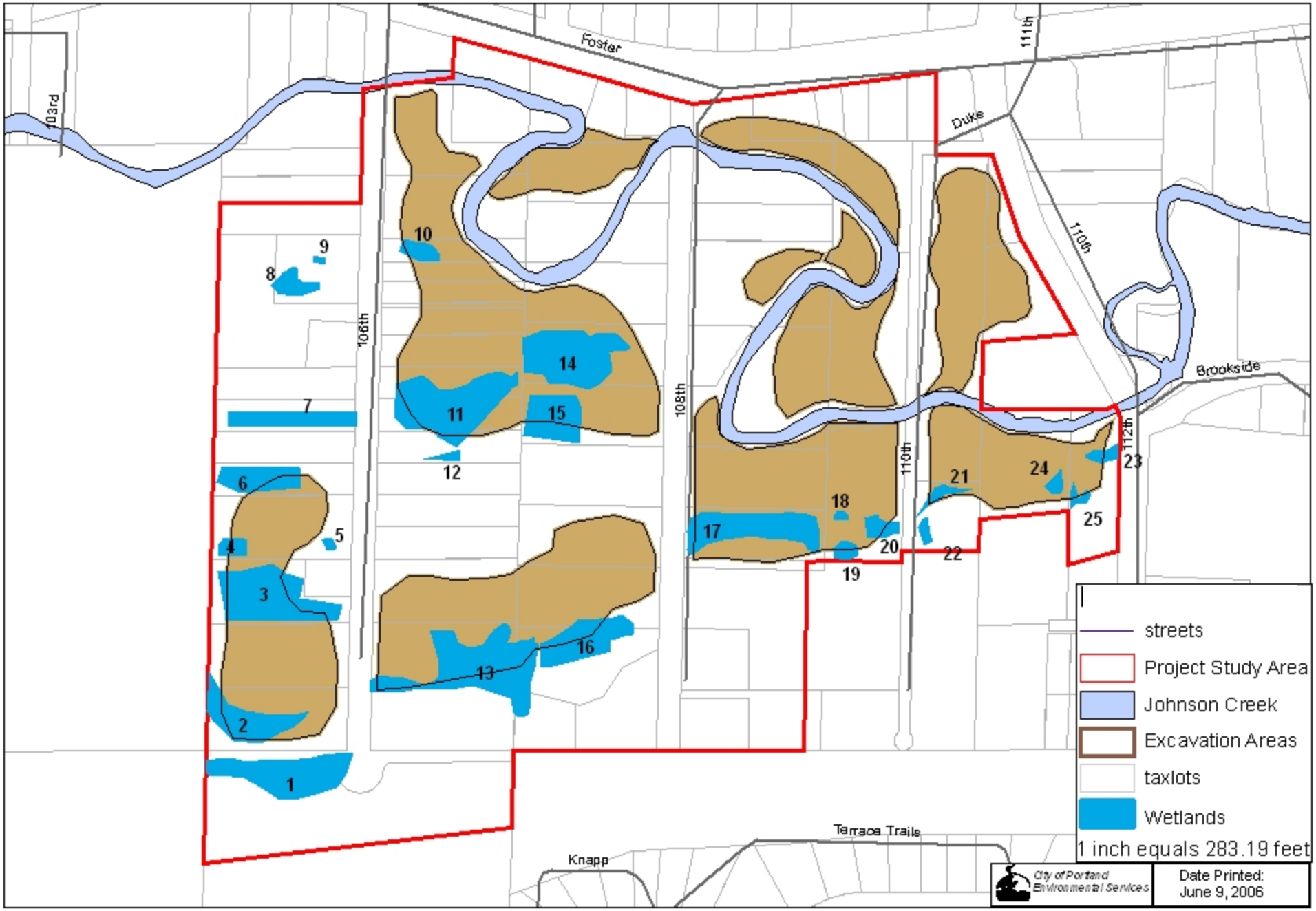



Figure 3 Wetlands

| Appendix B<br>Wetlands Table | | | |
|---|---|---|---|
| **Wetland (Map ID)** | **HGM Class** | **Dominant Cowardin Class[1]** | **Brief Description of Feature** |
| **Wetland 1 (W1)** | Slope | PFO | Wetland 1 is located at in a slight depression at the toe of a hill slope on the southwestern edge of the PSA to the south of Wetland 2. Vegetation in this wetland consists of slough sedge (*Carex obnupta* OBL), Oregon ash (*Fraxinus latifolia* FACW), and Douglas' spiraea (*Spiraea douglasii* FACW). Areas of surface ponding and saturated soils were observed within this wetland during the field investigation. |
| **Wetland 2 (W2)** | Flats | PEM | This wetland is associated with a slight depression and is located in the southwestern corner of the PSA. During soil sampling within this wetland, free water was observed in the soil test pit at 16 inches with soil saturation was at 10 inches. This wetland displays evidence of algal matting, which suggests it is periodically inundated, possibly due to flooding from the adjacent ditch (Ditch 1). Dominant vegetation consists of meadow foxtail (*Alopecurus pratensis* FACW) and buttercup (*Ranunculus* spp. FACW [estimate]). |
| **Wetland 3 (W3)** | Flats | PEM | Wetland 3 is an isolated wetland located on the western PSA boundary north of Wetland 2. This area is dominated by meadow foxtail, but also contains small amounts of Kentucky bluegrass (*Poa pratensis* FAC), water foxtail (*Alopecurus geniculatus* OBL), and curly dock (*Rumex crispus* FAC+). Soils sampled in this wetland exhibited hydric conditions with redoximorphic features (e.g. mottles) observed within 10 inches of the surface. |
| **Wetland 4 (W4)** | Flats | PFO | Wetland 4 is an isolated wetland located north of Wetland 3 along the western edge of the PSA and is associated with a slight topographic depression. Unlike other wetland features in the PSA, this wetland has not been recently excavated and is located behind an occupied residential lot. The wetland is dominated by Oregon ash, Douglas hawthorn (*Crataegus douglasii* FAC), slough sedge, vine maple (*Acer circinatum* FAC-), red-osier dogwood (*Cornus stolonifera* FACW), English ivy (*Hedera helix* NL), and Himalayan blackberry (*Rubus discolor* FACU). Evidence of surface ponding (i.e., algal matting) is apparent in this wetland feature |

[1] Cowardin *et al*. 1979.R – Riverine; 2 – Lower Perennial; UB1 - Unconsolidated bottom cobble gravel. P – Palustrine; EM – Emergent; OW – Open water; FO – Forested; UB4 – Unconsolidated bottom organic; B – Saturated.

| Appendix B<br>Wetlands Table | | | |
|---|---|---|---|
| **Wetland (Map ID)** | **HGM Class** | **Dominant Cowardin Class[1]** | **Brief Description of Feature** |
| **Wetland 5 (W5)** | Flats | PEM | Wetland is an isolated wetland located in a subtle depression on the west side of SE 106th Avenue. This wetland area exhibits signs of algal matting from surface ponding and a drainage ditch runs along the northern border of the wetland. Vegetation composition consists of rushes (*Juncus* spp. FACW), velvetgrass (Holcus lanatus FAC), bluegrasses (*Poa* spp. FAC), and Oregon ash saplings. |
| **Wetland 6 (W6)** | Flats | PEM | Wetland 6 is an isolated wetland located north of Wetland 4 and northwest of Ditch 2. The vegetation in this wetland consists primarily of meadow foxtail, creeping buttercup (*Ranunculus repens* FACW), bluegrasses, velvetgrass, red fescue (*Festuca rubra* FAC+), and orchard grass (*Dactylis glomerata* FACU). |
| **Wetland 7 (W7)** | Flats | PEM | Wetland 7 is an isolated wetland located between two currently occupied residential lots along the west side of SE 106th Avenue. The back (western) half of the lot displays evidence of algal matting indicative of long-term surface ponding and contains creeping buttercup along the edges of the lot. The front (eastern) portion of the lot contains creeping buttercup and velvetgrass and has saturated soils at the eastern edge. |
| **Wetland 8 (W8)** | Flats | PEM | Wetland 8 is an isolated excavated depression located just south of Wetland 9. The depression was likely created during removal of a single-family residence that previously occupied the site. Primary vegetation consists of reed canarygrass, green-sheath sedge (*Carex feta* FACW), and rushes (*Juncus* spp.) |
| **Wetland 9 (W9)** | Flats | PEM | Wetland 9 is a subtle isolated excavated depression on the west side of SE 106th Avenue. The depression was likely created during removal of a single-family residence that previously occupied the site. Vegetation in this wetland consists of slough sedge and *Juncus* sp. This wetland also displays evidence of algal matting, indicative of long-term inundation. |
| **Wetland 10 (W10)** | Flats | PEM | Wetland 10 is an isolated wetland located on the northeast side of SE 106th Avenue. Soils sampled in this wetland displayed mottles in the upper soil horizon. The dominant vegetation in this area is meadow foxtail, dandelion, velvetgrass, creeping buttercup, sweet vernal grass, and Kentucky bluegrass. |
| **Wetland 11 (W11)** | Flats | PEM | Wetland 11 is an isolated wetland located on the east side of SE 106th Avenue and borders the western edge of tax lots on SE 108th Avenue. The southern border is defined by a large Himalayan blackberry bramble. Vegetation in this large emergent wetland area consists of Kentucky bluegrass (dominant plant species), |

| Appendix B<br>Wetlands Table | | | |
|---|---|---|---|
| **Wetland (Map ID)** | **HGM Class** | **Dominant Cowardin Class[1]** | **Brief Description of Feature** |
| | | | dense sedge (*Carex densa* OBL), red clover (*Trifolium pretense* FACU), velvetgrass, and dandelion (*Taraxacum officinale* FACU). An Oregon white oak tree (*Quercus garryana* NL*)* occupies the northeast corner of the wetland area. A sample plot was taken in this area and revealed mottled soils in the second horizon between 4 – 10 inches and low chroma soils (10YR4/1 – Munsell notation) with mottling below 10 inches. |
| **Wetland 12 (W12)** | Flats | PEM | Wetland 12 is an isolated wetland located on the east side of SE 106th Avenue in a subtle depression that likely consists of fill material. The vegetation of this area is primarily reed canarygrass (*Phalaris arundinacea*), meadow foxtail, and creeping buttercup. |
| **Wetland 13 (W13)** | Flats | PEM | Wetland 13 corresponds to wetland LE-6 and LE-7 of the Adolfson Associates delineation. The vegetation in this wetland area consists of Oregon ash, red alder (*Alnus rubra*), reed canarygrass, creeping buttercup, and common velvetgrass. Himalayan blackberry forms part of the wetland boundary on the north side. Portions of this wetland exhibited surface ponding during the site investigation. |
| **Wetland 14 (W14)** | Flats | PEM | Wetland 14 is an isolated wetland located on what appears to be the former foundation pad for a residence that has been removed from the area. Soils within this feature possess mottling in the upper horizon (i.e., above 10 inches). The dominant vegetation species in this wetland are meadow foxtail, Kentucky bluegrass, fowl bluegrass (*Poa palustris* FAC), velvetgrass, and dandelion. Oregon ash was observed growing on the edge of this wetland. |
| **Wetland 15 (W15)** | Flats | PEM | Wetland 15 is an isolated wetland located just south of Wetland 14. Portions of this wetland appear to have been previously excavated. Soils sampled in this area displayed distinct mottling in the upper portion of the soil profile. The dominant vegetation species found in this wetland consists of *Ranunculus* spp., Kentucky and fowl bluegrass, dandelion, and weeping willow (*Salix babylonica* FAC+). |
| **Wetland 16 (W16)** | Flats | PEM | Wetland 16 is located on the west side of SE 108th Avenue, directly east of Wetland 13. The wetland is dominated by meadow foxtail with reed canarygrass, creeping buttercup, and velvetgrass in the lower topographic areas of the wetland. The wetland also contains some fowl bluegrass. The soils sampled at this location are hydric displaying mottling in the upper portion of the soil profile. |

| Appendix B<br>Wetlands Table | | | |
|---|---|---|---|
| **Wetland (Map ID)** | **HGM Class** | **Dominant Cowardin Class[1]** | **Brief Description of Feature** |
| **Wetland 17 (W17)** | Flats | PFO | Wetland 17 corresponds to wetland LE-5 of the Adolfson Associates delineation. This wetland contains a forested area dominated by black cottonwood and Oregon ash trees, and an understory of Douglas' spiraea, bentgrass (*Agrostis* sp.) and reed canarygrass. |
| **Wetland 18 (W18)** | Depressional | POW | Wetland 18 is an apparently isolated small pond that corresponds to wetland LE-3 of Adolfson Associates delineation. This pond is surrounded by black cottonwood and willow (*Salix* spp. FAC [estimate]) trees as well as Himalayan blackberry shrubs. |
| **Wetland 19 (W19)** | Depressional | POW | Wetland 19 is an apparently isolated pond slightly larger than Wetland 18, which corresponds to wetland LE-4 from the Adolfson Associates delineation. This wetland contains weeping willow trees, reed canarygrass, and bentgrass species. This pond is located next to an occupied residence. |
| **Wetland 20 (W20)** | Flats | PEM | Wetland 20 is an isolated wetland associated with an excavated lot on the west side of SE 110$^{th}$ Avenue. This wetland feature displays evidence of algal matting and the dominant vegetation consists of *Juncus* sp. and water foxtail. |
| **Wetland 21 (W21)** | Depressional | PFO | Wetland 21 is a small isolated topographic swale located northwest of Wetland 20. This wetland corresponds with wetland LE-1 of the Adolfson Associates delineation. Vegetation consists of Oregon ash trees, reed canarygrass, slough sedge, and creeping buttercup. Evidence of surface ponding was observed during the field investigation. |
| **Wetland 22 (W22)** | Depressional | PEM | Wetland 22 is an isolated wetland located east of SE 110$^{th}$ Avenue and east of Wetland 20. This wetland corresponds to LE-2 of the Adolfson Associates delineation. This small swale contains black cottonwood (*Populus balsamifera* FAC) and Oregon ash trees with reed canarygrass growing in the lower areas of the depression. Evidence of surface ponding was observed during the field investigation. |
| **Wetland 23 (W23)** | Flat | PFO | Wetland 23 is located on an alluvial terrace on the south side of Johnson Creek just west of SE 112$^{th}$ Avenue. Soils sampled in this riparian wetland area displayed low chroma soils with mottling in the upper portion of the soil profile. Dominant plant species in this wetland include black cottonwood, Oregon ash, slough sedge, and creeping buttercup. |

| Appendix B<br>Wetlands Table | | | |
|---|---|---|---|
| **Wetland (Map ID)** | **HGM Class** | **Dominant Cowardin Class[1]** | **Brief Description of Feature** |
| **Wetland 24 (W24)** | Depressional | POW | Wetland 24 is an apparently isolated small pond that is located southwest of Wetland 23. The pond is approximately 2 feet deep and bordered by Himalayan blackberry and Douglas' hawthorn. |
| **Wetland 25 (W25)** | Flat | PEM | Wetland 25 is an isolated wetland located within a small topographic depression on the eastern edge of the PSA just west of SE 112th Avenue. This wetland is dominated by reed canarygrass and also contains Himalayan blackberry on the surrounding slopes. The canopy is predominantly black cottonwood and Oregon ash. |
| **Ditch 1 (D1)** | N/A | N/A | Ditch 1 is located on the northern boundary of Wetland 2 and extends through the middle of the western portion of the wetland. This ditch is approximately 3 feet wide and extends offsite to the west and presumably discharges into Johnson Creek. At the time of the field investigation, the majority of the ditch was dry except for the western end which was holding water. |
| **Ditch 2 (D2)** | N/A | N/A | Ditch 2 is approximately 1 foot wide and situated between Wetlands 5 and 6. This ditch flows east to west but appears to completely dissipate onsite and does not connect to any other wetlands or waters. No water was observed in the ditch at the time of the field investigation. |
| **Ditch 3 (D3)** | N/A | N/A | Ditch 3 is a roadside drainage ditch approximately 18 inches wide with a gravel bottom. During the field investigation this dry ditch began to hold water which came flowing in from a source southeast of the PSA. |
| **Johnson Creek** | Riverine | R2UB1 | Johnson Creek flows 26 miles from its headwaters near the Sandy River to its confluence with the Willamette River. The creek flows east to west through a meandering channel along the northern portion of the PSA. Historical streambank stabilization and armoring efforts have led to a deeply incised channel through the PSA and at various other locations along the stream course. The depth of the creek ranges from approximately 2-8 feet and the width varies from approximately 7-13 feet within the PSA. |
| *Note: See Appendix A for location information on Wetlands and Ditches.* | | | |

OREGON INVENTORY OF HISTORIC PROPERTIES

# SECTION 106 LEVEL OF EFFECT FORM

06-1365

| | |
|---|---|
| **Agency/Project**: FEMA & City of Portland/ East Lents Floodplain Restoration Project Area of Johnson Creek | |
| **Property Name**: Johnson Creek Linear District | |
| **Street Address**: Between SE 106th and SE 110th along SE Foster Rd. | City, County: Portland, Multnomah County |

**Preliminary Finding of Effect:**

☐ No Historic Properties Affected ☒ No Historic Properties Adversely Affected ☐ Historic Properties Adversely Affected

**State Historic Preservation Office Comments:**

☒ Concur ☐ Do Not Concur: ☐ No Historic Properties Affected
☐ No Historic Properties Adversely Affected
☐ Historic Properties Adversely Affected

Signed Sarah Jalbrung Date _____

**Comments:**

**Provide written description of the project, and its potential effects on the subject property per 36 CFR 800. Include maps, drawings, and photographs as necessary to effectively describe and discuss the project. Use continuation sheets as needed.**

## INTRODUCTION

This statement of finding discusses the effect of the proposed Johnson Creek-East Lents Floodplain Restoration Project (East Lents) to the 1934 Works Projects Administration (WPA) sponsored State Emergency Relief Administration (SERA) and Civil Works Administration (CWA) flood control project along Johnson Creek in the Lents area of SE Portland. The portion of Johnson Creek to approximately river mile 15 was determined eligible for listing in the National Register of Historic Places by the State Historic Preservation Office (SHPO) on August 14, 2003 (Appendix A), and considered an eligible resource in an U.S. Army Corps of Engineers 1990 study entitled *A Cultural Resource Evaluation of the Keizer, Mill Creek, and Johnson Creek Projects* by Portland State University anthropologists, Linda L. Friedenburg and Greg C. Burtchard (Appendix B).

It is the finding of the Federal Emergency Management Act (FEMA) and the City of Portland that the project will have a No Adverse Effect on the Lents section of the Johnson Creek Linear District. *This finding of No Historic Resource Adversely Effected is based on the conditions discussed below.*

This statement of finding is made pursuant to the requirements of the National Historic Preservation Act of 1966 (36CRF800), Executive Order 11593, and the National Environmental Policy Act (NEPA).

## PROJECT DESCRIPTION

The proposed Johnson Creek-East Lents Floodplain Restoration Project is part of the State of Oregon Natural Hazard Mitigation Planning project. Oregon's statewide planning goals require local governments to address natural hazards in their comprehensive plan and land use regulations. Goal 7 directs local governments to protect life and property from natural disaster hazards. The City of Portland's Planning Bureau administers Portland's Natural Hazard Mitigation Plan that addresses short-term natural hazard mitigation such as floods, landslides, earthquakes, fires, and winter storms. To address this goal, the City of Portland has applied to FEMA for financial assistance with a hazard mitigation plan for flooding along Johnson Creek in the Lents area of SE Portland through their PreDisaster Mitigation Grant program.

The need for the project stems from historic accounts of repetitive flood events, with 37 out-of-bank floods since 1941, including 28 with property damage. Approximately 1,600 properties are within the 100-year floodplain. Frequently, roads are closed due to flooding in the area, including SE Foster Road, a main transportation arterial with an average daily use of 25,000 vehicles. The proposed project would result in increase floodplain storage and conveyance capacity by removing 1930s public works project rock riprap and fill, and terracing the channel of Johnson Creek. The excavation and removal would be paired with re-vegetation, which would improve the natural resource functions of the floodplain and enhance riparian habitat. The project would be implemented on approximately 35 acres of property owned by the City south of SE Foster Road from SE 106th to SE 110th Avenue (Figure 1). This includes .67 miles of Johnson Creek in the Lents project area; about 4.5% of the 15-mile extent of the 1930s SERA/CWA flood control project. No other historic resources were identified in the East Lents project area with the exception of three bridges over SE 106th, SE 108th, and SE 110th Avenues. Built in 1947, these structures have been modified/rebuilt extensively over the years, and were not part of the SERA/CWA Johnson Creek project.

# PUBLIC NOTICE

## Federal Emergency Management Agency (FEMA)
## Draft Environmental Assessment (EA)
## East Lents Floodplain Restoration Project in Portland, Oregon

Notice is hereby given that the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide funding to the city of Portland for a floodplain restoration project in Portland, Oregon. Funding would be provided as authorized by §203 of the Robert T. Stafford Disaster Assistance and Emergency Relief Act (Stafford Act), 42 USC.

FEMA prepared a draft environmental assessment (EA) for the proposed project pursuant to the National Environmental Policy Act (NEPA) of 1969 and FEMA's implementing regulations found in 44 Code of Federal Regulations Part 10. The EA evaluates alternatives for compliance with applicable environmental laws, including Executive Orders #11990 (Protection of Wetlands), #11988 (Floodplain Management), and #12898 (Environmental Justice). The alternatives evaluated include (1) no action; and (2) increasing floodplain storage and conveyance capacity by removing alluvial and man-made floodplain fill and terracing the banks along Johnson Creek. This excavation would be paired with revegetation of the banks and floodplain, which would improve the natural resource functions of the floodplain and enhance riparian habitat, thereby benefiting fisheries and other aquatic resources.

This notice will constitute the final notice as required by Executive Order 11988, Floodplain Management and Executive Order 11990, Protection of Wetlands. If no significant issues are identified during the comment period, FEMA will finalize the EA, issue a Finding of No Significant Impact (FONSI) and fund the project.

Copies of the draft EA are available for review on July 31, 2006 at the City of Portland, Bureau of Environmental Services 1120 SW 5th Avenue, 10th Floor, Portland, Oregon.

The EA is also available for review online at the FEMA environmental website at FEMA's website at: http://www.fema.gov/ehp/docs.shtm. Written comments on the draft EA should directed no later than 5 p.m. on August 30, 2006 to Mark G. Eberlein, Regional Environmental Officer, FEMA Region 10, 130 228th Street SW, Bothell Washington 98021 or by e-mail at mark.eberlein@dhs.gov. Comments can also be faxed to 425-487-4622.